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ABSTRACT

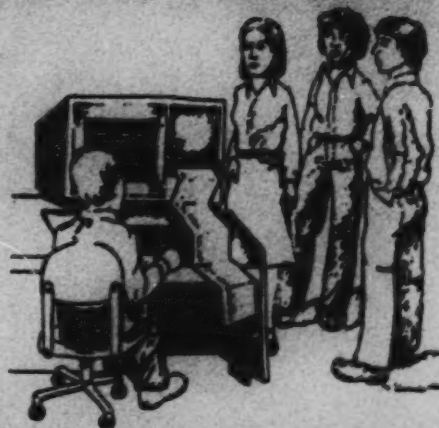
The lessons in this unit are designed primarily for Missouri vocational agriculture instructors participating in the Farm Business Management Analysis program. Each of the 10 lessons in the unit is a self-contained instructional package and includes material for monthly classroom sessions for young and adult farmers and for individualized instructional activity. The lessons include specific suggestions for teacher preparation. The sample entries throughout the unit are taken from the sample entry material available from the Instructional Materials Laboratory for the Missouri Farm Business Record Book. Lesson components include a review, objective, motivation, key points, introduction of information, discussion, conclusions, announcements, social time, instruction, and lesson materials such as transparencies and handouts and quizzes. Topics covered in the 10 lessons are the following: (1) minimizing the year's taxable income; (2) summarizing the year's records; (3) methods of tax management; (4) planning next year's livestock and cropping programs and cash flow; (5) analyzing a profit and loss statement; (6) analyzing a financial statement and cash flow; (7) analyzing livestock enterprises; (8) analyzing crop enterprises; (9) analyzing machinery, equipment, and building costs; and (10) using farm credit. (KC)

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UNIT II

FARM BUSINESS MANAGEMENT ANALYSIS

ANALYZING THE FARM BUSINESS



Revised 1993

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FARM BUSINESS MANAGEMENT ANALYSIS

UNIT II: ANALYZING THE FARM BUSINESS

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FOREWORD

The lessons in this unit, Unit II--Analyzing the Farm Business, are designed primarily for Missouri vocational agriculture instructors participating in the Farm Business Management Analysis program. (More information about the FBMA program can be found in the Administrative Guidelines packaged with Unit I.) Each lesson is a self-contained instructional package and includes material for the monthly classroom session and the monthly individualized instructional activity. The lessons are written using the Missouri format for adult instruction as outlined in the Administrative Guidelines for Farm Business Management Analysis. Specific suggestions for using the material in preparing to teach the lessons are also included in this publication. The sample entries throughout this unit are taken from the sample entry material available from IML (Instructional Materials Laboratory) for the Missouri Farm Business Record Book.

A key activity to successful local programs is the use of monthly individualized instruction periods. These must include checking with the enrollees to be certain that records are being kept up-to-date and that the correct procedure is being used. Effective farm management decisions must be based on current, accurate data and analysis.

The lessons are designed to be used with a group of enrollees primarily composed of local young and adult farmers, or they can be utilized for individual instruction. Monthly sessions should start in October and be conducted with subsequent lessons on a monthly schedule. Adaptations may need to be made in some communities to permit more than one lesson per month and none during the spring crop season. In essence, the curriculum is designed for flexibility, affording each instructor the latitude to adjust the curriculum to insure its most effective implementation.

Revised:

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TABLE OF CONTENTS

	<u>Page</u>
Acknowledgements	iii
Foreword	iv
To The Instructor--Suggestions for Use	vii
Lesson 1: Minimizing This Year's Taxable Income	1.1
Lesson 2: Summarizing the Year's Records	2.1
Lesson 3: Methods of Tax Management	3.1
Lesson 4: Planning Next Year's Livestock and Cropping Programs and Cash Flow	4.1
Lesson 5: Analyzing the Profit/Loss Statement	5.1
Lesson 6: Analyzing the Financial Statement and Cash Flow	6.1
Lesson 7: Analyzing Livestock Enterprises	7.1
Lesson 8: Analyzing Crop Enterprises	8.1
Lesson 9: Analyzing Machinery, Equipment, and Building Costs	9.1
Lesson 10: Utilizing Farm Credit	10.1

TO THE INSTRUCTOR--SUGGESTIONS FOR USE

Unit II--Analyzing the Farm Business is designed as a curriculum guide for Farm Business Management Analysis (FBMA) instructors to use in helping Missouri young and adult farmers develop a record keeping system. The unit is composed of ten lessons that include topics such as summarizing the year's records; methods of tax management; analyzing the profit/loss statement; analyzing livestock and crop enterprises; and utilizing farm credit.

The outline of each lesson is based on the Missouri format for adult instructional materials, which is very similar to procedures applied in using the problem solving approach. The major components of each lesson include the review, objective, motivation, key points (called study questions when using a structured problem solving approach), introduction of information (facts, examples, etc., needed to address each key point), discussion, conclusions, announcements, social, individual instruction, and materials needed to teach the lesson (transparencies, handouts, etc.).

Because a curriculum cannot be "all things to all people," instructors are encouraged to use this unit as a guide to teaching FBMA. For example, transparencies and handouts are suggested for use, but could be replaced with self-designed materials that the instructor feels are more appropriate in a specific community. Furthermore, while one instructor uses every transparency and handout provided with the lesson, another may only use a select few because the information could be presented in a more appropriate manner.

All lessons, transparencies and handouts relate to the sample entries and reports generated from a case farm study. References throughout the curriculum to the "Sample Entries for the Missouri Farm Business Record Book (Answer Key)" refer to the enclosed of that name included with Unit I. References to the "FBMA sample analysis forms" refer to the enclosed pink, blue and green forms.

Transparencies and handouts are numbered separately for each unit and are labeled using the abbreviations TM and HO, respectively. For example, the first lesson contains TM-1.1 through TM-1.2 and HO-1.1 through HO-1.7. In several instances, for example lesson 3, transparencies and handouts from a preceding lesson are suggested for use with the current lesson. Instead of duplicating the materials in each lesson, a reference to the previous lesson is made in the subsequent lesson. Furthermore, several transparencies and handouts are combined on one sheet and are consequently labeled with both identification codes (TM-2.1 and HO-2.2, Lesson 2). Handouts should be duplicated by the instructor, while transparencies can be self-produced or ordered from the Instructional Materials Laboratory at the University of Missouri-Columbia.

Quizzes have been included at the end of most of these lessons. These are provided as additional materials that can be used to motivate the enrollees; they are not intended to be used as measures of achievement at the end of each lesson.

Before teaching a lesson, the instructor should thoroughly review the lesson and accompanying materials. Instructors piloting these lessons generally suggest two methods for preparing to teach the lesson: 1) read the lesson several times and highlight (circle or color code) specific parts to facilitate instruction; and 2) outline a lesson plan, based on the FBMA lesson, that can be taken into class and used without the help of the original FBMA lesson. These procedures help assure that the instructor is thoroughly acquainted with the information and materials before going into class and is not relying solely on the printed curriculum.

Each enrollee, or pair of enrollees (if spouses, business partners, etc., are enrolled simultaneously), needs a Missouri Farm Business Record Book. In addition, the instructor may want enrollees to maintain a notebook in which notes, handouts, and examples can be placed. If this is the case, the instructor will probably want to punch all handouts for convenient insertion in these personal notebooks. Besides being a home or office reference for enrollees to use when making actual entries, the notebook could provide a convenient, useful reference for the instructor and enrollees to use during individual visits (suggested with each monthly lesson).

FARM BUSINESS MANAGEMENT ANALYSIS

Unit II: Analyzing the Farm Business

Lesson 1: Maximizing This Year's After-Tax Income

A. Review

Because this is the first lesson for this year, a review is impossible. You may want to let each family report on progress and/or other happenings since the last meeting. The main purpose is to re-establish the group's working relationship.

B. Objective

To make year-end tax management decisions in order to maximize after-tax income.

Note: Gathering up-to-date information on current tax changes should be done frequently. A number of good tax workshops are available in November each year. Instructors are advised to make it a point to attend at least one.

C. Motivation

Tell the enrollees that by estimating their receipts and expenses before the end of the year, they have an opportunity to minimize taxable income. This can be done by determining if a shift in either income or expenses from this year to next year will decrease their total tax payments and also be a sound management decision.

For example, consider a family of four that has an adjusted gross income of \$30,000 one year and zero the next. If they take a standard deduction and no tax credits, they would pay \$2,216 based on 1992 rates. The same family that earned \$15,000 per year would pay \$0 each year, or have a tax savings of \$2,216 as a result of planning. We can never achieve a perfectly level figure, but we can work towards it. Teacher note: Social security taxes are not considered above because they are the same in both situations.

It is poor planning to reduce gross income to the point of losing standard deductions. It is advisable to always have at least \$15,000 of adjusted gross income in order to take advantage of standard deductions.

D. Key Points

Key points that will be accomplished are as follows:

1. *How do I get my cash flow ready for completing a tax management analysis?*
2. *How do I use the FBMA computer tax estimate program?*
3. *How is the information for the tax estimate program entered into the computer?*
4. *How is the printout interpreted, and how are adjustments made?*

E. Introduction of Information

Begin by telling enrollees that the majority of this lesson will concern procedures and methods necessary for utilizing and interpreting the computerized tax estimate program.

1. *How do I get my cash flow ready for completing a tax management analysis?*

The key to the successful use of this tax estimate program is having accurate records up to the current month (usually October, November, or December at the time of the lesson). Information for the estimate program will be drawn from Forms 27 and 28. Have the enrollees turn to Forms 27 and 28 in their record books. Old tax forms are helpful, also.

At this point Forms 27 and 28 should be completed up to the end of the current month, and the totals for each line and column should be checked for accuracy.

2. *How do I use the FBMA computer tax estimate program?*

After the enrollees have their cash flows (Forms 27 and 28) up-to-date, explain that the class will be working through the computer tax estimate program. Having gone through the program in class, they should be able to complete their own tax estimate at home using their own figures.

At this time the FBMA tax estimate program should be brought up on the computer. The best method of presentation would be to use an overhead computer screen. If this is not available, and if you have a computer for each pair of enrollees, you can walk them through the

program as you explain the screens. If possible, have a completed example for viewing.

3. *How is the information for the tax estimate program entered into the computer?*

Distribute a written copy of each area of the tax estimate program. As you go through each area, you will need to explain what the enrollee will need for input in the computer and what the program will generate.

Distribute HO-1.1 (Instructions for Ranges and Menus). Be sure to clarify NOTE TO USERS.

Distribute HO-1.2 (General Information). Start by entering taxpayer general information.

Distribute HO-1.3 (Farm Worksheet-Income and Expenses). Enter figures pertaining to the sales of enterprises and farm related expenses.

Distribute HO-1.4 (Farm Worksheet-Inventory). Optional screen.

Distribute HO-1.5 (Other Income). Enter figures pertaining to non-farm and other income.

Distribute HO-1.6 (Itemized Deductions). Enter figures pertaining to non-farm expenses.

Distribute HO-1.7 (Tax Summary). This will summarize and give you an estimated figure for the current tax year liability.

4. *How is the printout interpreted, and how are adjustments made?*

- a. HO-1.2 (General Information) should be checked for accuracy.
- b. HO-1.3 changes will allow for adjustments of the income for the year. If it appears the enrollee will have a low or negative tax bill, it would be wise to increase the income for the year. Remember that standard deductions are only used against income; they will not increase a loss. TM-1.1 (Methods To Increase Income) should be used at this time to relate different means of increasing income.

- c. If the tax bill is higher than the average tax should be for the enrollee, you will want to add to the expenses. (Be sure the total tax picture for a four- to five-year tax period is considered.) Every change in tax payments now should be weighed against the future impact on the overall farm plan. TM-1.2 (Methods To Delay Income) should be used at this time to relate ways of decreasing income. You will also want to discuss the impact that these methods would have on the future income of the farm. The purchase of an item of equipment that will not give an added return to the business and that is bought simply to reduce taxes may prove to be a very unwise purchase.

F. Discussion

Point out that Lesson 3 will go into detail about the different methods of tax management. At this time the goal is to make sure enrollees are ready to take advantage of the changes they can make in the short run. Take some time to do some "what if" types of changes to the tax estimate program. Remind the class that you will work with their individual problems at the next scheduled individual meetings.

G. Conclusions

Conclusions that may be reached include:

1. The tax management program offers the opportunity to acquaint enrollees with tax planning and management.
2. Options are available to the taxpayer for controlling taxes, not just paying them without control.
3. Good records of investment credit, depreciation, capital gains, etc., are essential for effective tax management.
- 4.

Announcements

Next meeting, we will be reviewing procedures for summarizing the year's records for computer analysis.

Social

Individual Instruction

When meeting with the enrollees after this lesson, you will be helping them adjust their computer printout for any changes.

Materials Needed

Instructor

TM-1.1	Methods To Increase Income
TM-1.2	Methods To Delay Income
FBMA Computer Tax Estimate Program	
(current program available through the FBMA state office)	

Student

HO-1.1	Instructions for Ranges and Menus
HO-1.2	Taxpayer Information
HO-1.3	Farm Worksheet-Income and Expenses
HO-1.4	Farm Worksheet-Inventory
HO-1.5	Other Income
HO-1.6	Itemized Deductions
HO-1.7	Tax Summary
<u>Missouri Farm Business Record Book</u>	

METHODS TO INCREASE INCOME

- A. Sell Marketable Grain, Livestock, Etc. Before December 31.
- B. Postpone Expenditures And Investments Until January 1.
- C. Work With Suppliers To Pay Bills After January 1.
- D. Use Straight Line Depreciation.
- E. Do Some Off-Farm Or Custom Work.

METHODS TO DELAY INCOME

- A. Use Deferred Sales Contracts.
- B. Make Advance Purchases of Feed And Fertilizer. (Must be firm and have an advantage; should be the same each year.)
- C. Postpone Some Sales Until Next Year.
- D. Purchase Needed Machinery, Equipment, Etc. Before End Of Year For Expensing And Some Depreciation.
- E. Use Accelerated Depreciation (150% DB).

INSTRUCTIONS FOR RANGES AND MENUS

To proceed to a range, type (Alt M) to bring menu up. Then move cursor to range that you want to select and hit return. Start by entering taxpayer information, farm information and then others.

Contents of Range	Range Name
TAXPAYER INFORMATION	TAXPAY1
TAXPAYER INFORMATION	TAXPAY2
INCOME SUMMARY	INCOME
ADJUSTMENTS TO INCOME	ADJSTMNT
ITEMIZED DEDUCTIONS	ITEMIZED
TAX SUMMARY	TAXSUM
FARM INCOME	FARMINC
FARM EXPENSES	FARMEXP
FARM INVENTORY (\$1 change needed if accrual)	FARM INV
FARM INCOME SUMMARY	FARM SUM
SELF EMPLOYMENT INCOME AND RET PLAN CONT	SEINCOME
SCHEDULE D	SCH_D
FORM 4797	FRM_4797
FORM 6251 ALTERNATIVE MINIMUM TAX COMP	FRM_6251
FORM 6781 GAINS (Losses) FROM FUTURES	FRM_6781

NOTE TO USERS: This software is being provided "as is" and without any warranties as to performance or merchantability. Use is restricted to Missouri FBMA instructors and their students. It is mandatory that the user test the program before relying upon any of the results of the program. The user assumes the entire risk of using the program. This program is provided without any express or implied warranties.

NAME OF TAXPAYER: (Enter on line below)

Date:

TAXPAYER INFORMATION

[Enter amounts in col. C]

EXEMPTIONS (for Federal Tax)

0

(Mo. Tax = not your or spouse, +1 ea. >65 or blind)

0

TOTAL AMOUNT OF SOCIAL SECURITY BENEFITS RECEIVED 0

=====

TAXPAYER INFORMATION - PAGE 2

1992 FILING STATUS

[Place 1 in col. C]

JOINT

0

SINGLE

0

MARRIED/SEPARATE

0

HEAD OF HOUSEHOLD

0

AGES:

TAXPAYER

0

SPOUSE

0

ACCOUNTING METHOD

[Place 1 in col. C]

CASH (Cannot have any inventory values or @err)

0

ACCRUAL (Must have \$1 inventory change or @err)

0

RETIREMENT PLANS

TAXPAYER IS COVERED UNDER PENSION PLAN

0

SPOUSE IS COVERED UNDER PENSION PLAN

0

FARM WORKSHEET-INCOME

- * Enter quantities in Col. G
- * Enter value in Col. H
- * Enter negative number for purchase cost

	QUANTITY	VALUE	PRICE/BU
CORN	0	0	\$0.00
SOYBEANS	0	0	\$0.00
WHEAT, OATS AND MISC CROPS	0	0	\$0.00
CUSTOM WORK,PATR.DIV.,FUEL TAX REF.		0	
CASH SETTLEMENTS,RENTS,MISC.		0	
ASC CASH & CERT.RECEIPTS		0	
LIVESTOCK PRODUCTS (Milk,etc.)		0	
MARKET HOGS		0	
Less PURCHASE COST		0	
MARKET CATTLE		0	
Less PURCHASE COST		0	
OTHER LIVESTOCK		0	
Less PURCHASE COST		0	
*****TOTAL SALES		0	

FARM WORKSHEET-EXPENSES	QUANTITY	VALUE
HIRED LABOR		0
INTEREST		0
CHEMICALS		0
FERTILIZER		0
SEED		0
LIVESTOCK SUPPLIES		0
UTILITIES		0
INSURANCE		0
MISCELLANEOUS		0
TAXES, CASH RENT & SETTLEMENTS		0
MACHINE REPAIR & MACHINE HIRE		0
FUEL & OIL		0
AUTO EXPENSE		0
BUILDING AND FENCE		0
DRYING AND STORAGE		0
FEED PURCHASED		0
DEPRECIATION		0
*****TOTAL EXPENSE		0

FARM WORKSHEET-INVENTORY	BEG INV VALUES	END INV VALUES	CHANGE IN VALUE
CORN	0	0	0
SOYBEANS	0	0	0
WHEAT	0	0	0
SEED CORN	0	0	0
HAY	0	0	0
FEED/PROTEIN	0	0	0
COWS & BULLS	0	0	0
FEEDER CATTLE	0	0	0
CALVES	0	0	0
OTHER	0	0	0
SOWS AND BOARS	0	0	0
MARKET HOGS	0	0	0
SHEEP	0	0	0
MISC CROPS	0	0	0
MISC LIVESTOCK	0	0	0
OTHER	0	0	0
*****TOTAL VALUES	0	0	0

=====

FARM INCOME SUMMARY

GROSS FARM SALES	0
INVENTORY ADJUSTMENT	ERR
GROSS FARM PROFIT	ERR
TOTAL FARM EXPENSE	0
NET FARM INCOME	ERR

INCOME		TAXPAYER	SPOUSE
FICA WAGES	E	0	0
OTHER WAGES (Wages paid by sole prop. spouse)	E	0	0
FULLY TAXABLE INT. AND DIVIDENDS	E	0	0
INTEREST ON MUNICIPALS (Excluded on Federal)	E	0	0
NON FARM INCOME (Sch. C Business)	*A	0	0
CAPITAL GAINS AND (Losses)	*A/T:E/S	0	0
GAIN (Loss) FROM Form 4797	*A/T:E/S	0	0
PENSIONS, ANNUITIES AND IRA DIST.	E	0	0
RENTS AND ROYALTIES	E	0	0
PARTNERSHIPS	*A	0	0
ESTATES AND TRUSTS	E	0	0
FARM INCOME	*A	ERR	0
TAXABLE AMT. OF SECURITY BENEFITS	*A	ERR	0
OTHER INCOME	E	0	0
DIRECTOR'S FEES, COMM. ETC. (S.E. Inc.)	*A	0	0
N.O.L. CARRYFORWARD (Enter as a negative #)	E	0	0
SUBTOTALS	*A	ERR	0
TOTAL INCOME	*A	ERR	

=====

ADJUSTMENTS TO INCOME

EMPLOYEE BUSINESS EXPENSES	E	0
HEALTH INSURANCE DEDUCTION	E	0
PAYMENTS TO AN IRA (See SEINCOME)	*A	ERR
PAYMENTS TO A KEOGH PLAN (See SEINCOME)	*A	ERR
PENALTY FOR EARLY WITHDRAWAL OF SAVINGS	E	0
ALIMONY PAID	E	0
1/2 SELF EMPLOYMENT TAX	*A	ERR
TOTAL ADJUSTMENTS	*A	ERR
ADJUSTED GROSS INCOME.....	*A	ERR
ITEMIZED DEDUCTIONS (See ITEMIZED)	*A	ERR
STANDARD DEDUCTION	*A	ERR
EXEMPTIONS * 2300	*A	0
TAXABLE INCOME	*A	ERR

ITEMIZED DEDUCTIONS

MEDICINE AND DRUGS	E	0
MEDICAL, DENTAL & INSURANCE COSTS	E	0
BALANCE: MED.,DENTAL,INS. (Less 7.5% AGI)	*A	ERR
STATE INCOME TAXES	E	0
RESIDENTIAL REAL ESTATE TAXES	E	0
OTHER TAXES	E	0
HOME MORTGAGE INTEREST	E	0
INVESTMENT INTEREST	E	0
OTHER INTEREST (Nonfarm only)	E	0
CONTRIBUTIONS	E	0
*****CONTRIBUTION LIMITATION*****	*A	ERR
CASUALTY AND THEFT LOSSES	E	0
MOVING EXPENSES	E	0
MISCELLANEOUS DEDUCTIONS	E	0
DEDUCTIBLE MISCELLANEOUS	*A	ERR
TOTAL ITEMIZED DEDUCTIONS	*A	ERR

TAX SUMMARY

1992 TAXABLE INCOME	*A	ERR
1992 FEDERAL INCOME TAX From Tax Table	*A	ERR
1992 RETIREMENT PLAN CONTRIBUTIONS	*A	ERR
TAX SAVINGS FROM RETIREMENT PLAN (Already deducted)		ERR
Less: ITC (Available, Useable via AMT)	E	0 ERR
Less: OTHER CREDITS	E	0
Balance: FEDERAL INCOME TAX		ERR
SELF-EMPLOYMENT TAX (Includes spouse)	*A	ERR
ALTERNATIVE MINIMUM TAX	*A	ERR
INVESTMENT CREDIT RECAPTURE	E	0
AMOUNTS PAID OR WITHHELD ON FEDERAL INCOME TAX	E	0
1992 MISSOURI INCOME TAX	*A	ERR
AMOUNTS PAID OR WITHHELD ON MISSOURI INCOME TAX	E	0

BALANCE DUE ON TOTAL 1992 TAX LIABILITY	*A	ERR

*** To print, use Alt P ***

FARM BUSINESS MANAGEMENT ANALYSIS

Unit II: Analyzing the Farm Business

Lesson 2: Summarizing the Year's Records

A. Review

The previous lesson, Maximizing This Year's After-Tax Income, should be reviewed. List all conclusions reached at your last meeting. Possible conclusions may have included:

1. The tax management program offers the opportunity to acquaint enrollees with tax planning and management.
2. Options are available to the taxpayer for controlling taxes, not just paying them without control.
3. Good records of investment credit, depreciation, capital gains, etc., are essential for effective tax management.
- 4.

B. Objective

To be able to properly summarize and complete the record book at the end of the year for computer analysis.

C. Motivation

Point out to the group that during the year they have worked hard to get receipts and expenditures recorded correctly. They have kept Forms 27 and 28--Cash Flows and enterprise Forms 30, 32 and 33 up-to-date monthly. Explain to them that none of that work will be worth anything unless the figures are totaled, checked, and cross-checked for accuracy on all of the summary forms so that a meaningful end-of-the-year analysis can be done.

As an example, you might relate an experience in which you or a farmer has completed the Forms 27 and 28--Cash Flows, only to find an error back in the expenditures section. In this case, all you can do is go back and correct all figures affected by the error. The further you go in completing the book, the harder it is to correct any error that may have been made.

Administer the accompanying quiz, HO-2.1, as a motivating experience for enrollees. Discuss each item.

D. Key Points

Key points that will be accomplished are as follows:

1. *How are expenses and receipts on Forms 27 and 28 totaled and cross-checked for summary and analysis?*
2. *How is enterprise Form 30 totaled and cross-checked for summary and analysis?*
3. *How are enterprise Forms 32 and 33 totaled and cross-checked for summary and analysis?*

E. Introduction of Information

Start the introduction of information by explaining to the enrollees that the main part of the lesson will be a discussion how to summarize and complete each form. To help them understand, this lesson uses examples from the Sample Entries for the Missouri Farm Business Recordbook (Answer Key) to aid in the discussion.

1. *How are expenses and receipts on Forms 27 and 28 totaled and cross-checked for summary and analysis?*

Forms 27 and 28--Cash Flows are the first forms to be totaled and checked at the end of the year. It is a must that figures on Forms 27 and 28 be correct because most of the figures for income tax preparation come directly from these forms.

- a. Refer to Forms 27 and 28--Cash Flow in the Sample Entries for the Missouri Farm Business Record Book (Answer Key). Tell the enrollees that basically three things need to be done when completing Forms 27 and 28. First, make sure that all figures to be entered on Forms 27 and 28 from other forms are accurate and are transferred properly. Second, run and cross-check the totals. Third, balance the figures to be sure that no numbers were left off. Guidelines for checking and completing Forms 27 and 28 are as follows:

- (1) Make sure monthly totals have been transferred to Form 27 from Forms 1-6 and 7-10. Form 12 monthly totals should have been transferred to Form 28 for totals to be transferred to Form 27, Lines D and I.
- (2) Run totals on all columns and make sure figures on total Lines A through H are correct.

- (3) Total each line across and write the line total in the "Total" Column at the right.
- (4) Make the following cross-checks:
 - (a) Line A totals, January through December = totals of Lines 1 through 26.
 - (b) Line B totals, January through December = totals of Lines 27 through 30.
 - (c) Line C totals, January through December = totals of Lines A plus B.
 - (d) Line D totals, January through December = totals of Form 28 Lines P1 through P12.
 - (e) Line E totals, January through December = totals of Lines C, 31, and D.
 - (f) Line F totals, January through December = totals of Lines 32 through 59.
 - (g) Line G totals, January through December = totals of Lines 60 through 63.
 - (h) Line H totals, January through December = totals of Lines F and G.
 - (i) Line J totals, January through December = totals of Lines H, 64, and I.
- (5) Check completeness of entries (whether or not all receipts, expenses, etc., were entered in the record book):
 - (a) If one checking account is used for farm and family, then--
 - 1) The following items should already be entered on Form 27: "Money Borrowed-Farm" (Line 31); "Non-Farm Receipts" (including items such as non-farm salaries, sale of C.D.s, etc.) (Line D (Form 28, Line A)); "Principal Paid On Borrowed Funds" (Line 64); "Non-Farm Expenditures" (including items such as retained patronage

allocations, purchase of C.D.s, family living including social security, income tax, purchase of family capital items, and other family living expenses, etc.) (Line I (Form 28, Line B)). If they are, the cash balance beginning of year plus or minus cash difference for year (Line K--"Total" Column) should equal cash balance end of year.

- 2) In almost every case, there will be a difference due to omissions of some entries--maybe all in family living. Check first for omissions of money borrowed, principal paid, non-farm income or expense. If there are no omissions, move on. If the family living was estimated, ask the enrollee if that figure plus or minus the difference found in 1) above would be realistic for family living. If the answer is yes, assume the entries on Form 27 are correct and proceed. If the answer is no, check for a missing entry. If a receipt is missing, check deposit slips against entries. If an expense is missing, check canceled checks against entries. Even if the family living was recorded, there still could be an error in it. However, if the enrollee is confident of this figure, proceed with the other steps outlined above to check for a missing entry.

It is a judgment factor on how much difference to accept before proceeding. It could be pointed out to the enrollee that if it appears \$3,000 in expenses is missing and the family is in the 30% tax bracket, the extra taxes will be \$900. This would justify spending some time finding the error. If the enrollee owes no tax and the error is relatively small, move on.

- b. Have enrollees complete the sample cash flow you have given them for the year as they would do in their own records. Have them use the procedures outlined above for adding and cross-checking. When they have all finished, have enrollees compare figures and discuss any problems encountered. Use the completed sample Forms 27 and 28--Cash Flow pages in the

Sample Entries for the Missouri Farm Business Record Book
(Answer Key) to aid in your discussion.

2. *How is enterprise Form 30 totaled and cross-checked for summary and analysis?*

Give enrollees a copy of HO-2.3. At the end of the year, each enrollee with a livestock enterprise should have one or more copies of Form 30 completed for the year's analysis of the enterprise. They should have figures entered for all appropriate months. Totaling and cross-checking should be a fairly simple task if the form has been kept up-to-date monthly. Show TM-2.1 and have enrollees follow on HO-2.3 as you discuss the following guidelines for totaling and cross-checking Form 30 for the year.

- a. Complete "Total" Line for Columns 1 through 17 for January through December.
- b. Complete "Total" Line for Columns 19 through 27 for January through December.
- c. Balance numbers of livestock in order to be sure that all livestock in the enterprise are accounted for in the record book. January breeding numbers on this form should agree with last year's closing inventory, and December numbers should agree with this year's closing inventory. Use the following formula in balancing livestock numbers:

Number on beginning inventory (from last year's Form 36 or last year's analysis) + number purchased (from Form 10, expenditures) + number born (from Form 30) should be equal to number on closing inventory (from Form 17 or Form 36) + number sold (from Forms 2 and 4, receipts) + number died (from Form 30) + number consumed (from Form 36).

- d. Balance feed fed. Check the amount of feed fed against the amount raised, sold, purchased, and inventoried to make sure that figures are in balance. Use the following formula in balancing feed fed:

Beginning inventory of all feed (from Form 18 or last year's analysis) + purchases of all feed (from Form 7, expenditures) + feed raised (Forms 32 and 33) should be equal to closing inventory of all feed (from Form 18 or Form 37) + amount sold (from Form 1, receipts) + amount fed (from Form 30).

3. *How are enterprise Forms 32 and 33 totaled and cross-checked for summary analysis?*

Give enrollees a copy of HO-2.4. At the end of the year, the field records on Forms 32 and 33 should be completed for all crops harvested during the year. The forms should then be completed and checked to see that all numbers are in balance. Show TM-2.2 and have enrollees follow on HO-2.4 as you discuss the following guidelines for totaling and cross-checking Forms 32 and 33 for the year.

- a. Entries should have been kept up-to-date monthly.
- b. Balance owned and rented acres. All owned and rented acres should be accounted for on Forms 32 and 33, even if they are non-productive acres. Use the following formulas in balancing and checking acre numbers:

Total owned farm acres equals total owned grain crop acres + total owned forage and other acres.

Total rented farm acres equals total rented grain crop acres + total rented forage and other acres.

Total farm acres equals total grain crop acres (owned and rented) + total forage and other acres (owned and rented).

- c. Total the land inventory. Owned and rented land is classified as tillable, non-tillable or other on land inventory. All land that is plowable, including rotation pasture and hay, is considered tillable. All other land is considered non-tillable except for totally non-productive land such as creeks, roads, and farmsteads.
- d. Balance production quantities. Check the figures on quantities of each crop produced against inventories, sales, purchases, and amount fed for each crop. Use the following formulas to balance crop quantities on each crop:

Quantity on beginning inventory (from Form 18 or last year's analysis) + quantity raised (from Form 32 or 33) + quantity purchased (from Form 7, expenditures) should equal quantity sold (from Form 2, receipts) + quantity fed (from Form 30) + quantity on closing inventory (from Form 18 or 37).

- e. Check enterprise expenses. Remember that the enterprise expenses for each crop are all of the expenses incurred by the operator and landlord for each harvested crop. They may include some items that were purchased in the prior year. Use the formula below to help determine if all crop expenses have been enterprised:

Prepaid crop expenses at the beginning of the year from last year (growing wheat expense and herbicides, seed, fertilizer, etc., for summer crops) + crop expenses during the year = expenses allocated to all crops (Forms 32 and 33) + any prepaid expenses for next year's crops, including growing wheat.

F. Discussion

Sufficient time should be given for enrollees to ask questions and discuss summarizing the record book for the year. Review the procedures each enrollee should go through in totaling and checking each form. Give enrollees a copy of HO-2.5 to use at home as they work individually to get their books ready for summarization and analysis. Discuss any problems enrollees feel they may encounter in getting this done. Discuss things they may want to do differently next year to make this job easier.

G. Conclusions

Conclusions that may be reached include:

1. An analysis of records is only as accurate as the figures that are used.
2. Summarizing the record book will be a simple job if it has been kept up-to-date correctly during the year.
3. The further you go in the record book before finding errors, the longer it will take to get them corrected.
4. A checklist should be followed when summarizing the record book to insure that nothing is left out.
- 5.

Announcements

Next meeting, we will be reviewing procedures for income tax preparation and talking about tax management.

Social

Individual Instruction

When meeting with enrollees after this lesson, you will be helping them fill out their input forms for the computer analysis. This may well be the most important individual meeting of the year. The enrollees should have Forms 27, 28, 30, 32, and 33 ready when you get there. The first thing you should do is go over these forms with the enrollees and make sure they are correct. When an enrollee summarizes the record book for the first time, you will probably need to check over the book very carefully, and you are likely to find some errors. If there are errors, work with the enrollees and get the errors corrected before doing anything else. As the enrollees get used to using the record system, they should have little difficulty in getting the record book to this point. After verifying that Forms 27, 28, 30, 32 and 33 in the record book are correct, you will need to work together with the enrollees in completing the input forms for the computer analysis. Complete the input forms in the order in which they come. Use the guidelines and input forms at the end of the chapter (page 2.25 to 2.51) to help complete the enrollee's input forms.

Materials Needed

Instructor

- TM-2.1 Example Form 30--Livestock Enterprise Data
 (combined with HO-2.3)
- TM-2.2 Example Forms 32 & 33--Field Records (combined
 with HO-2.4)
- FBMA Input Forms
Sample Entries for the Missouri Farm Business Record Book (Answer
Key)

Student

- HO-2.1 Quiz--Summarizing the Year's Records
- HO-2.2 Key For Quiz (HO-2.1)
- HO-2.3 Example Form 30--Livestock Enterprise Data
 (combined with TM-2.1)
- HO-2.4 Example Forms 32 & 33--Field Records (combined
 with TM-2.2)
- HO-2.5 Checklist for Summarizing Records
Missouri Farm Business Recordbook

FORM 30

Enterprise: CATTLE 32119 LIVESTOCK ENTERPRISE DATA

	PURCHASED FEED (protein, pre-mix, etc.)						GRAINS						ROUGHAGE				Pasture Days	
	PROT						Corn						HAY					
	Quantity	\$		Quantity	\$		Bushel	\$	Bushel	\$	Bushel	\$	Tons	\$	Tons	\$		
JAN.	400	48											12				JAN.	
FEB.	400	48											12				FEB.	
MARCH	400	48											12				MARCH	
APRIL	400	48														1200	APRIL	
MAY	400	48														1560	MAY	
JUNE	400	48														1560	JUNE	
JULY	400	48														1560	JULY	
AUG.																1560	AUG.	
SEPT.	400	48														1560	SEPT.	
OCT.	400	48														1560	OCT.	
NOV.	400	48														1560	NOV.	
DEC.	400	48											18				DEC.	
TOTAL	4400	528											54	1170		12120	TOTAL	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	

	Average # Sows & Gilts in Herd	# Litters Farrowed	# Pigs Born	# Pigs Weaned		Average # Cows, Ewes, Mares	# Born	# Weaned		Average % Test for Dairy Cows	Average Dairy Cows Dry	Average Dairy Cows Milked
JAN.					JAN.	40			JAN.			
FEB.					FEB.	40			FEB.			
MARCH					MARCH	40	23		MARCH			
APRIL					APRIL	40	17		APRIL			
MAY					MAY	40			MAY			
JUNE					JUNE	40			JUNE			
JULY					JULY	40			JULY			
AUG.					AUG.	40			AUG.			
SEPT.					SEPT.	40		21	SEPT.			
OCT.					OCT.	35		17	OCT.			
NOV.					NOV.	35			NOV.			
DEC.					DEC.	35			DEC.			
TOTAL					TOTAL		40	38	AVERAGE			
	18	19	20	21		22	23	24		25	26	27

POULTRY:
 Eggs produced: _____ doz. \$ _____
 Eggs sold: _____ doz. \$ _____
 Eggs consumed: _____ doz. \$ _____

19 88 LIVESTOCK ENTERPRISE DATA CATTLE 324

Enterprise: _____

FORM 30

	PURCHASED FEED (protein, pre-mix, etc.)						GRAINS						ROUGHAGE				Pasture Days	
							Corn						HAY					
	Quantity	\$	Quantity	\$	Quantity	\$	Bushel	\$	Bushel	\$	Bushel	\$	Tons	\$	Tons	\$		
JAN.																		JAN.
FEB.																		FEB.
MARCH																		MARCH
APRIL																		APRIL
MAY																		MAY
JUNE																		JUNE
JULY																		JULY
AUG.							62	173					1	30				AUG.
SEPT.																		SEPT.
OCT.																		OCT.
NOV.																		NOV.
DEC.																		DEC.
TOTAL							62	173					1	30				TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	

	Average # Sows & Gilts in Herd	# Litters Farrowed	# Pigs Born	# Pigs Weaned		Average # Cows, Ewes, Mares	# Born	# Weaned		Average % Test for Dairy Cows	Average Dairy Cows Dry	Average Dairy Cows Milked
JAN.					JAN.				JAN.			
FEB.					FEB.				FEB.			
MARCH					MARCH				MARCH			
APRIL					APRIL				APRIL			
MAY					MAY				MAY			
JUNE					JUNE				JUNE			
JULY					JULY				JULY			
AUG.					AUG.				AUG.			
SEPT.					SEPT.				SEPT.			
OCT.					OCT.				OCT.			
NOV.					NOV.				NOV.			
DEC.					DEC.				DEC.			
TOTAL					TOTAL				AVERAGE			
	18	19	20	21		22	23	24		25	26	27

POULTRY:
Eggs produced: _____ doz. \$ _____
Eggs sold: _____ doz. \$ _____
Eggs consumed: _____ doz. \$ _____

19 LIVESTOCK ENTERPRISE DATA

Enterprise: SWINE 301

FORM 30

	PURCHASED FEED (protein, pre-mix, etc.)						GRAINS						ROUGHAGE				Pasture Days	
	PROT		CREEP		Quantity	\$	Corn											
	Quantity	\$	Quantity	\$			Bushel	\$	Bushel	\$	Bushel	\$	Tons	\$	Tons	\$		
JAN.	18286	2194	2893	521			1280	2816										JAN.
FEB.	18286	2194	2893	521			1280	2816										FEB.
MARCH	18286	2194	2893	521			1280	2816										MARCH
APRIL	18286	2194	2893	521			1280	2944										APRIL
MAY	18286	2194	2893	521			1280	3072										MAY
JUNE	18286	2194	2893	521			1280	3172										JUNE
JULY	25144	3017	3978	716			1760	4224										JULY
AUG.	25144	3017	3978	716			1692	4227										AUG.
SEPT.	25144	3017	3978	716			1760	4400										SEPT.
OCT.	25144	3017	3978	716			1760	4576										OCT.
NOV.	19430	2332	3074	553			1360	3536										NOV.
DEC.	19430	2332	3074	553			1360	3808										DEC.
TOTAL	249152	29896	39418	7096			17578	42307										TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	

	Average # Sows & Gilts in Herd	# Litters Farrowed	# Pigs Born	# Pigs Weaned		Average # Cows, Ewes, Mares	# Born	# Weaned		Average % Test for Dairy Cows	Average Dairy Cows Dry	Average Dairy Cows Milked
JAN.	80	20	160	145	JAN.				JAN.			
FEB.	80	20	150	155	FEB.				FEB.			
MARCH	80			145	MARCH				MARCH			
APRIL	80	20	170		APRIL				APRIL			
MAY	80	20	166	165	MAY				MAY			
JUNE	80			156	JUNE				JUNE			
JULY	110			197	JULY				JULY			
AUG.	110	20	175	168	AUG.				AUG.			
SEPT.	110	35	200		SEPT.				SEPT.			
OCT.	110				OCT.				OCT.			
NOV.	85	35	167	155	NOV.				NOV.			
DEC.	85	20	209		DEC.				DEC.			
TOTAL		190	1227	1286	TOTAL				AVERAGE			
	18	19	20	21		22	23	24		25	26	27

POULTRY:
Eggs produced: _____ doz. \$ _____
Eggs sold: _____ doz. \$ _____
Eggs consumed: _____ doz. \$ _____

FORM 32

19 88 FIELD RECORD

1	FIELD NO.	DESCRIPTION	ACRES	CROP	TILLAGE TIME/TYPE*	SEED			FERTILIZER					LIME			
						Date	Variety	Rate/Acre	Date	Application Method**	Pounds Applied/Acre			Date	Tons/Acres	Test	
											N	P ₂ O ₅	K ₂ O				
1	1	SW Farm	30	Soybean	S-P	5/15/88	Anderson	70 lbs	5/15/88	SD	0	18	35	4/10/87	—	6.0	1
2	2	SW Farm	43	Soybean	S-P	5/06/88	Anderson	70 lbs	5/06/88	SD	0	18	35	4/10/87	—	6.5	2
3	3	SW Farm	40	Soybean	S-P	5/06/88	Longworth	70 lbs	5/06/88	SD	0	18	35	4/11/87	—	6.7	3
4	4	Bottoms	85	Corn	S-P	5/06/88	1412	20,000 seeds	5/06/88	SD	130	60	80	4/10/87	—	6.4	4
5	5	Bottoms	30	Corn	S-P	5/18/88	1412	20,000 seeds	5/18/88	SD	130	60	80	4/10/87	—	6.5	5
6	6	Johnson Farm	50	Wheat	F-FC	10/06/88	Topper	1.8 bu	10/04/88	PPI	50	35	35	5/06/88	200	5.5	6
7	7	Johnson Farm	75	Wheat	F-FC	10/07/88	Topper	1.8 bu	10/05/88	PPI	50	35	35	5/08/88	200	5.4	7
8	8	Johnson Farm	40	Wheat	F-FC	10/09/88	Topper	1.8 bu	10/05/88	PPI	50	35	35	5/08/88	200	5.4	8
9	9	Main Farm	100	Pasture	—	—	—	—	5/18/88	TD	17	17	17	—	—	—	9
10	10	Main Farm	80	Pasture	—	—	—	—	5/19/88	TD	17	17	17	—	—	—	10
11	11	Main Farm	55	CAP(Past)	—	—	—	—	5/21/88	TD	17	17	17	—	—	—	11
12																	12
13																	13
14																	14
15																	15
16																	16
17																	17
18																	18
19																	19
20																	20
21																	21
22																	22
23																	23
24																	24
25																	25
26																	26

*TIME: F = Fall, S = Spring. Type: P = Plow, C = Chisel, DH = Disk Harrow, FC = Field Cultivator, CU = Cultivator

**Application Method: D = Deep, ST = Starter, SD = Side Dress, TD = Top Dress, PPI = Preplant Incorporate

19 82 FIELD RECORD Cont.

FORM 33

	HERBICIDE				HERBICIDE				HERBICIDE				INSECTICIDE			HARVEST			NOTES (special conditions, rainfall, irrigation, etc.)	
	Date	Kind	Method	Rate/ Acre	Date	Kind	Method	Rate/ Acre	Date	Kind	Method	Rate/ Acre	Date	Kind	Rate/ Acre	Date	Yield/ Acre	% Moisture		
1	5/10/82	LA SSO	PPI	2 lb													28 bu.			1.
2	5/10/82	LA SSO	PPI	1 lb													26 bu.			2.
3	5/10/82	LA SSO	PPI	1 lb													30 bu.			3.
4	5/20/82	BANVIK	TD	1/2 PT													104 bu.		SLIGHT WIND	4.
5	5/20/82	BANVIK	TD	1/2 PT													106 bu.			5.
6	-	-	-	-													40 bu.			6.
7	-	-	-	-													32 bu.			7.
8	-	-	-	-													22 bu.		EXTENSIVE DISEASE PROBLEMS	8.
9	-	-	-	-													3 AUM			9.
10	-	-	-	-													3 AUM			10.
11	-	-	-	-													0			11.
12																				12.
13																				13.
14																				14.
15																				15.
16																				16.
17																				17.
18																				18.
19																				19.
20																				20.
21																				21.
22																				22.
23																				23.
24																				24.
25																				25.
26																				26.

QUIZ--SUMMARIZING THE YEAR'S RECORDS

- ___ 1. Total dollars available and total dollars used during the year should be the same except for the difference in bank balance between the beginning and end of the year. True or False
- ___ 2. All income and all expenses, both farm and non-farm, should be shown somewhere on the Form 27--Cash Flow summary. True or False
- ___ 3. In order to balance livestock numbers for the year, you would include: (Select all correct answers.)
- a. beginning and ending inventories
 - b. purchases and sales during the year
 - c. number breeding and non-breeding
 - d. number consumed
 - e. number born and died
- ___ 4. If Farmer Jones started the year with 1,500 bushels of corn on inventory, raised 3,200 bushels during the year, sold 1,200 bushels during the year, and ended the year with 560 bushels on inventory, how much corn was fed to livestock? (Place answer to left.)
- ___ 5. Farmer Jones received \$1,100 patronage dividend allocation, but only \$300 of it was in a check. The \$800 balance was kept by his co-op for retained earnings. It should be recorded as follows: (Select all correct answers.)
- a. \$1,100 is recorded in Dividend Receipts
 - b. \$300 is recorded in Dividend Receipts
 - c. \$800 is recorded in Dividend Receipts
 - d. \$1,100 is recorded in Non-Farm Investment
 - e. \$300 is recorded in Non-Farm Investment
 - f. \$800 is recorded in Non-Farm Investment

KEY FOR QUIZ (HO-2.1)

1. True
2. True
3. a, b, d, and e
4. 2,940 bushels
5. a and f

CHECKLIST FOR SUMMARIZING RECORDS

1. Complete Forms 27 and 28--run totals and make cross-checks to see that information is complete and accurate for the year.
 - _____ Line E totals, January through December = yearly totals of Lines A + B + 31 + D
 - _____ Line J totals, January through December = yearly totals of Lines F + G + 64 + I
 - _____ Cash balance at the beginning of the year + or - cash difference for the year should equal cash balance at the end of the year

2. Complete Form 30--run totals and make cross-checks to see that information is complete and accurate for the year.
 - _____ Livestock numbers are in balance: Number on beginning inventory (from last year's Form 36 or last year's analysis) + number purchased (from Form 10, expenditures) + number born (from Form 30) should be equal to number on closing inventory (from Form 17 or Form 36) + number sold (from Forms 2 and 4, receipts) + number died (from Form 30) + number consumed (from Form 36)
 - _____ Feed fed is in balance: Beginning inventory of all feed (from Form 18 or last year's analysis) + purchases of all feed (from Form 7, expenditures) + feed raised (Forms 32 and 33) should be equal to closing inventory of all feed (from Form 18 or Form 37) + amount sold (from Form 1, receipts) + amount fed (from Form 30)

3. Complete Forms 32 and 33--run totals and make cross-checks to see that information is complete and accurate for the year.
 - _____ Owned farm acres are in balance: Total owned farm acres equals total owned grain crop acres + total owned forage and other acres
 - _____ Rented farm acres are in balance: Total rented farm acres equals total rented grain crop acres + total rented forage and other acres
 - _____ Land inventory is in balance: Total farm acres equals total grain crop acres (owned and rented) + total forage and other acres (owned and rented)

- Quantities of crops produced are in balance: Quantity on beginning inventory (from Form 18 or last year's analysis) + quantity raised (from Form 32 or 33) + quantity purchased (from Form 7, expenditures) should equal quantity sold (from Form 2, receipts) + quantity fed (from Form 30) + quantity on closing inventory (from Form 18 or 37)
- Crop expenses are all accounted for and in balance: Prepaid crop expenses at the beginning of the year from last year (growing wheat expense and herbicides, seed, fertilizer, etc., for summer crops) + crop expenses during the year = expenses allocated to all crops (Forms 32 and 33) + any prepaid expenses for next year's crops, including growing wheat.

FBMA INPUT FORM

FARM I.D. NO. _____
 NAME _____
 SCHOOL _____

RECORD YEAR _____

RECEIPTS

FORM 27

1, R2, R3, & R4		Operator			Landlord		
Crop Receipts (Lines 1-6)		Bu./#	\$		Bu./#	\$	
Ent.#	Name						
Government Payments Cash/Other (Lines 8+9)			\$			\$	
Custom Work (Line 11)							
Dividends (Line 12)							
Refunds							
Resales (Line 13)							
Cash Rent, Ld. Settlement (Line 14)							
Other Farm Receipts (Lines 21-26)							
State Gas Tax Refund							
Federal Gas Tax Refund							
Crop Insurance Proceeds (Line 7)							
ASC Wool (Part of 8 or 20)							
CCC Loan Election (Line 10)							
CCC Loan Cost Basis							
Ent.#	Non-Br.Lvstk Sales (Lines 15-17)	Operator			Landlord		
		No.	Qty/lbs	\$	No.	Qty/lbs	\$
Ent.#	Br. Lvstk Sales (Lines 27-29)	No.	Qty/lbs	\$	No.	Qty/lbs	\$
Mach., Equip., Bldgs. Sold (Line 30)			\$			\$	
Money Borrowed (Line 31)							
Non-Farm Receipts (Line D or Form 28 Line A)							

VISITED 01/92 JH

**Farm Analysis Input Form
Completing the Receipts**

- A. On completing the receipts be sure to record all operator's receipts. These receipts for the most part will come from Form 27 or 28 of the Farm Business Record Book.
- B. If the farm is a share crop operation every effort should be made to record the production of the landlord. In most cases the operator will know the yields. The local averages can be used to complete the dollar value for the landlords production.
- C. The enterprise number refers to the enterprise (020 corn, etc.).
- D. Government Payments: Include all government payments for crops and land improvement in this area. Wool payments are recorded in an area of their own.
- E. Custom Work: This should include only machine work performed on land not in operator's farming operation. Custom work for landlord should be a part of the Landlord Settlement.
- F. Dividends should include taxable dividends from cooperatives and other farm related business (farm related means the dividend was a result of the farming effort of the operator). All other dividends should be part of non-farm income.
- G. Refunds: An example of a refund would be chemicals or seeds returned for cash or credit on account. For enterprise accounting be sure the returns are credited to the proper enterprise.
- H. Resales: Some people will report seed corn sales, feed sales, and all items they purchased for the landlord in this area. It should only include farm operation resales. If the farmer is a dealer of seed, feed, or other items, and wants to include those items in records, it should be a non-farm income.
- I. Cash Rent, Landlord Settlements: Cash rent paid to operator (pasture-hay-stock field) should go here. Landlord Settlements will include what the landlord paid the operator for fertilizer, seed, chemicals, etc. that the operator paid for any applied to the landlords share of crop in crop share program. (Remember if cash rent is received here, landlord will have an equal expense on the expense page.)
- J. Other Farm Receipts: Items that just don't fit any where else that are true farm income should go here. In most cases there should be very little income in this area.

- K. **State + Federal Gas Refunds:** These items are often omitted but are farm income because they are refunds on farm expenses. In most cases they are deducted from the tax returns and are not readily available in the record book.
- L. **Crop Insurance:** Report the receipts from crop insurance when they become income for tax purposes. If you plan to report the current crop insurance in the next year, list it as an account receivable income for the current year.
- M. **ASC Wool Payment:** Wool payments should not be reported as a part of government payments. For the most part government payments are returns to crops, and wool payments are returns to livestock.
- N. **CCC Loan Election and CCC Loan Cost Basis** are only used for reporting information for Schedule F. CCC Loan Election are the loans the operator wants to report as income for the current year. CCC Loan Cost Basis is the value of loan taken in former years, but reported as income this year. In this case report the face value of the loan. That is the basis in the loan and it will be entered on Schedule F in the proper place.
- O. **Livestock Receipts:** Make sure the head and pounds are given on all entries.
- P. **Capital Sales:** Report total sales here and be sure to list all items on depreciation schedule again on Capital Items Sold form.
- Q. **Money Borrowed:** This is money borrowed for farm purposes only.
- R. **Non-Farm Receipts:** This includes all other income for the year.

**FBMA Analysis Input Form
Completing the Expenditures**

Crop and Feed Purchases: Be sure to include pounds or bushels of feed and crop purchases. Be sure and break down feed into enterprise codes (170 Complete Feed, 020 Corn, etc.).

The bulk of farm expenditures are straight forward and will require very little discussion here. The line number relates to the line on Form 27 in the record book. The following are clarifications for some expenses.

Breeding Fees, Registration: This is a good place to list items of cost for farms raising registered livestock. In some cases you may want to use this line for other farm educational and promotional costs.

Machinery and Truck Hire: Item to include in this area would be custom work, grinding and mixing, and other production related expenses.

Freight & Trucking: This relates to cost of transporting crops and livestock to market.

Cash Rent, Landlord Settlement: Remember any item paid out here needs to be a receipt for landlord.

Hired Help: Record only hired help that taxes and Social Security are paid on. All other should be machinery and truck hire or miscellaneous farm expenses.

Soil & Water: For tax purposes this area will be handled differently. If you expect to deduct 100% of the expenses, it should be a part of machine hire.

Livestock Purchases: Identify the enterprise. Be sure to include number, pounds, and purchase costs on all entries.

Capital Purchases - Principal Paid - Non-Farm Investments - Family Living: These items are very important and in some cases will require a great deal of effort to get them correct.

Labor: Report the months of Labor used in this operation. If you had an expense for Hired Help, you should show the appropriate months of Hired Labor.

Capital Items -- Purchased and Sold: Entries made here will allow the updating of the depreciation schedule. These items include machinery, purchased breeding livestock, land, buildings, fences, etc. Code numbers for the items being traded or sold are the numbers in Columns 3, 4, 5, and 6 on the left side of the depreciation printout. In the case of selling raised breeding stock, write raised under comments.

FORM 27

E5 & HL

OPERATOR

Machinery & Equipment Purchased	\$	Hired Labor	Unpaid Operator Labor	Unpaid Family Labor	Unpaid Landlord Labor
Buildings Purchased/Improved					
Land Improvements Capitalized		mos.	mos.	mos.	mos.
Land Improvements Depreciated					
Land Purchased					
Principal Paid					
Non-Farm Expense					
Non-Farm Investment					
Family Living					

CAPITAL ITEMS--PURCHASED

FORM 27

(Machinery, Purchased Breeding Livestock, Land, Buildings, Fences, etc.)

Date Acquired	Item Description Kind, Make, Model, Size, Livestock	New or Used	Cash Difference Paid	Code # of Trade*	Amount to Expense (Sec. 179)	Life	Method of Depreciation	Enterprise and Comments

CAPITAL ITEMS--SOLD

Date Sold	Item Description Kind, Make, Model, Size, Livestock	Code Number*	Amount Received	Comments**

*The numbers for the item being traded are the numbers in Columns 3, 4, 5, and 6 on the left side of the depreciation printout.

**In the case of selling raised breeding stock, write raised under comments.

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GRAIN CROP ENTERPRISE RECORD

ORM 32 & 33 (Crop year)

Ent. # & LA		ACRES			Rent Agreement Example 50/50	PRODUCTION		
Ent. #	Crop	Owned	Rented	Total		Operator's share (Qty)	Landlord's share (Qty)	Total (Qty)
020	Corn							
030	Soybeans							
040	Wheat							
110	Milo							
180	Set-Aside Acres							
050	Other Grain Crops							
060	Oats							
070	Other/Mixed*							
080	Corn Silage							
090	Haylage (Ton)							
100	Legume-Grasses (Ton)							
120	Other							
130	Alfalfa (Ton)							
	Other Land (Roads, Etc.)							

Rescue Seed/Red Clover Seed

LAND INVENTORY

	ACRES		TOTAL LAND VALUE	
	Owned	Rented	Owned	Rented
Productive Cropland				
Non-Productive Cropland				
Timber Double Cropped				

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FBMA Analysis Input Form
Completing the Crop and Land Forms

- A. **Crop Enterprise Record (Form 32 & 33):** This form should account for all the crop production in the farming operation. Be sure and give the landlord's share on all rented land.
- B. **Land Inventory:** Productive cropland is any land which economic production can be received from. Non-productive land is roads and farmsteads and in some cases timber, if it has no known productive value. Value of rented land should be estimated at current value for the area if not known.
- C. **Operator's New Crop Record:** This form only deals with the purchases and the quantity raised for the current analysis year. Each crop raised during the year should have one of these forms completed. What the form wants to know is what happened to all crops raised and purchased for the operator's share of the farm for the year.

Example: Operator raised 200 acres of owned corn and share cropped 100 acres of rented (50/50). The corn yield was 100 bushels to the acre. The operator would have raised 35,000 bushels of corn (20,000 bushels from his own land and 5,000 bushels from his share of rented land).

Formula:

Purchased + Raised = Sales + Seed Used + Feed Fed + Ending Inventory

OPERATOR'S "NEW" CROP RECORD

****THIS FORM ONLY DEALS WITH THE PURCHASES AND THE QUANTITY RAISED.**
PURCHASES + RAISED = SALES + SEED + FEED + ENDING INVENTORY

CA	QUANTITY	\$
Name (Crop Enterprise)		
Acres (Operator's share only)		
A. Raised (Operator's share-current crop year)		
B. Purchases (Current crop year)		
Sales of A. & B.		
Seed used from A. & B.		
Feed of A. & B.		
Ending Inventory of A. & B.		

	QUANTITY	\$
Name (Crop Enterprise)		
Acres (Operator's share only)		
A. Raised (Operator's share-current crop year)		
B. Purchases (Current crop year)		
Sales of A. & B.		
Seed used from A. & B.		
Feed of A. & B.		
Ending Inventory of A. & B.		

	QUANTITY	\$
Name (Crop Enterprise)		
Acres (Operator's share only)		
A. Raised (Operator's share-current crop year)		
B. Purchases (Current crop year)		
Sales of A. & B.		
Seed used from A. & B.		
Feed of A. & B.		
Ending Inventory of A. & B.		

	QUANTITY	\$
Name (Crop Enterprise)		
Acres (Operator's share only)		
A. Raised (Operator's share-current crop year)		
B. Purchases (Current crop year)		
Sales of A. & B.		
Seed used from A. & B.		
Feed of A. & B.		
Ending Inventory of A. & B.		

L1 LIVESTOCK ENTERPRISE NAME				ENT.#	
Feed/Name	Quantity/lbs.	\$	Breeding Record	No.	Quantity/lbs
			Death Loss		()
			Female Mos.		
			Liters/Cows in Herd		
			#Farrowed/Calf Born		
			Weaned		
			Animal Units		
			Enterprise (For Enterprise Analysis use a (1))		
Purchased Cost of Lvstk Sold				No.	Lbs.
Pasture Days			Consumed		
Milk Fed			Feeder Pigs Sold		

L1 LIVESTOCK ENTERPRISE NAME				ENT.#	
Feed/Name	Quantity/lbs.	\$	Breeding Record	No.	Quantity/lbs
			Death Loss		()
			Female Mos.		
			Liters/Cows in Herd		
			#Farrowed/Calf Born		
			Weaned		
			Animal Units		
			Enterprise (For Enterprise Analysis use a (1))		
Purchased Cost of Lvstk Sold				No.	Lbs.
Pasture Days			Consumed		
Milk Fed			Feeder Pigs Sold		

L1 LIVESTOCK ENTERPRISE NAME				ENT.#	
Feed/Name	Quantity/lbs.	\$	Breeding Record	No.	Quantity/lbs
			Death Loss		()
			Female Mos.		
			Liters/Cows in Herd		
			#Farrowed/Calf Born		
			Weaned		
			Animal Units		
			Enterprise (For Enterprise Analysis use a (1))		
Purchased Cost of Lvstk Sold				No.	Lbs.
Pasture Days			Consumed		
Milk Fed			Feeder Pigs Sold		

**FBMA Analysis Input Form
Completing the Livestock Forms**

Form 30 should be completed on each livestock enterprise. The quality of the enterprise record will depend on the accuracy and completeness of this form.

- A. The quantity, pounds, and dollar value of each feed is the total of all purchased, raised, or inventory feed fed during the year. A common error is to only list the purchased feed.
- B. Death loss accounts for all deaths for the year for all enterprises except swine. Swine death loss are for death of pigs after weaning.
- C. Female months for swine only is the number of sows in the herd each month totaled for the year.

Example: (Jan.) 20 sows, (Feb.) 30 sows, (Mar.) 25 sows = 75 total

- D. Litters for swine equal the total number of litters farrowed for the year. The cows in the herd equal the average cows in the herd for the year. Take the number of breeding cows in the herd each month and divided by 12 to get the average.
- E. Farrowed or calf born equal the total head of animals born for the year.
- F. Weaned is the total number of animals weaned for the year.
- G. Animal Units: This unit is figured as one animal unit equals 1000 lbs. and is used for beef, dairy, and sheep enterprises.

Example: 20 1,000 # beef cows = 20 animal units
 20 500 # steers = 10 animal units
 20 200 # ewes = 4 animal units

- H. Purchase Cost of Livestock Sold: This is the purchase cost of any animal sold that was not raised on the farm. It is not the purchase cost of all animals purchased during the year, but only the cost of the animals sold. In many cases that cost may have accrued in prior years.
- I. Consumed: Give the total number, pounds, and dollar value of all livestock consumed.
- J. Feeder Pigs Sold: This line should only be completed for a farrow to finish swine operation in which some of the production is sold as feeder pigs.

Example: 400 head of pigs are farrowed, 350 are fed out to 235#, and the other 50 are sold as feeder pigs @ 60#.

No.	Lbs.	\$
[50]	[3000]	[1750]
		$(\$35 \times 50 = \$1,750)$

- K. Pasture Days: One pasture day is equal to 1 animal unit on pasture for one day.

Example: 30 1000# beef cows on pasture for 45 days = 1350 pasture days

20 500# steers on pasture for 60 days = 600 pasture days

- L. Milk Fed: Pounds of milk fed to dairy replacement bobby calves or swine enterprises.

INVENTORY OF LIVESTOCK

FORM 17

LI

BREEDING LIVESTOCK		BEGINNING			ENDING		
Ent. #	Type	No.	Qty/Lbs.	\$	No.	Qty/Lbs.	\$

NON-BREEDING LIVESTOCK		BEGINNING			ENDING		
Ent. #	Type	No.	Qty/Lbs.	\$	No.	Qty/Lbs.	\$

OTHER LIVESTOCK SUPPLIES

FORM 18

OL	BEGINNING	ENDING
Vet. Supplies	\$	\$
Bedding		
Other Livestock Supplies		

LIVESTOCK ENTERPRISE RECORD 2

LIVESTOCK ENTERPRISE _____

L2

MILK	Quantity/Lbs.	\$	EGGS	Dozen	\$
% Test			Produced		
Cows Dry			Purchased		
Cows Milked			Consumed		
Lbs. Purchased			Sold		
Lbs. Sold					
Gallons Consumed					
Gallons Fed					

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FBMA Analysis Input Form
Completing the Livestock Inventories

Inventory of Livestock: Beginning and ending inventories include all livestock on the farm January 1 (Beginning) and December 31 (Ending). The dollar value would be the fair market value of the animals. Be sure to include the enterprise, number, pounds, and dollar value.

Inventory Other Livestock Supplies

- A. **Vet Supplies:** This includes drugs and equipment at fair market value.
- B. **Bedding:** This includes wood shavings and straw if not listed on crop inventory.
- C. **Other Livestock Supplies:** This includes the fair market value of panels, feeders, fencing, and other livestock equipment not on the depreciation schedule.

Livestock Enterprise Record 2: This form is used to report needed information to complete dairy and poultry enterprise analysis.

- A. **% Test:** The average butterfat test for dairy enterprise.
- B. **Cows Dry:** The average number of cows dry each month during the year.
- C. **Cows Milked:** The average number of cows milking in the herd each month.
- D. **Lbs. Purchased:** If milk is purchased for some reason, it should be recorded here.
- E. **Lbs. Sold:** Entry is the total pounds of milk sold for the year.
- F. **Gal. Consumed:** This is the amount consumed by the farm family.
- G. **Gal. Fed:** Milk fed to replacement bobby calves or swine must equal the amount listed on livestock enterprise Form 30.
- H. **Eggs:** Complete all areas in dozen of eggs.

FORM 18

INVENTORY OF CROPS & FEED

CI		BEGINNING		ENDING	
Ent.#	Name	Quantity/Lbs.	\$	Quantity/Lbs.	\$
170	Protein, supp., minerals				
020	Corn				
030	Soybeans				
040	Wheat				
110	Milo				
080	Silage				
100	Haylage (Ton)				

FORM 18

OTHER CROP SUPPLIES

OC		BEGINNING		ENDING	
Seeds		\$		Seeds	\$
Fertilizer, Lime Applied				Fertilizer, Lime Applied	
Fertilizer Stored				Fertilizer Stored	
Herbicides				Herbicides	
Insecticides				Insecticides	
Fungicides				Fungicides	
Twine, etc.				Twine, etc.	
Fuel				Fuel	
Oil				Oil	
Grease				Grease	
Other Crop Supplies				Other Crop Supplies	
Growing Fert./Growing Crops				Growing Fert./Growing Crops	
Growing Seed				Growing Seed	

RAISED SEED USED

E6	ENT.#	OPERATOR		LANDLORD	
Seed		Quantity	\$	Quantity	\$

FEED FED (OPTIONAL)

E7	ENT.#	OPERATOR		LANDLORD	
Feed		Quantity	\$	Quantity	\$

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**FBMA Analysis Input Form
Completing the Crop Inventories**

Inventory of Crops and Feeds: This inventory is one of the most important parts of the analysis program. The year ending inventory should be as accurate as possible. If you question the amount in bins, the ASCS office will measure them for you for a small fee. If at all possible never change the beginning inventory of one year from the ending inventory of the preceding year.

Other Crop Supplies: Inventory these items at fair market value with the exception of growing crops. Growing crops should be listed for the value of inputs applied (fertilizer, seed, etc.).

Raised Seed Used: For enterprise analysis it is important to identify what happened to all the production on the farm. The raised seed used should be reported on this form. This form should report all home raised crops used for seed.

Example: 100 bushel of the previous year's soybeans were cleaned and used for seed in the current year. Placing them on this form will remove them from inventory and charge them to the current year's soybean crop.

100 bushel of wheat for current wheat crop was used for seed wheat for next year's wheat seeding. Placing the seed on this form will charge the seed to the growing wheat crop and give credit to the current year's wheat production on the farm.

Feed Fed (Optional): This is an optional form and should only be used to report feed fed that is not a part of livestock enterprise analysis.

Example: 110 bushel of corn was fed to two steers fed out for home use. You don't want to enterprse analysis this livestock program, but you need to account for the corn. Record the corn on this form.

ASSETS

FORM 25 & 26

AN	BEGINNING		ENDING	
	Modified Cost Basis	Fair Market Value	Modified Cost Basis	Fair Market Value
Family Bank Balance				
Savings				
Stocks & Bonds & PIC				
Accounts & Notes Receivable (Non-Farm)				
Life Insurance (Cash Value)				
Auto (Family Share)				
Non-Farm Real Estate (Residence)				
Other Non-Farm (Household)				

AF	BEGINNING		ENDING	
	Modified Cost Basis	Fair Market Value	Modified Cost Basis	Fair Market Value
Cash in Farm Account				
Farm Accounts Receivable				
Breeding Livestock				
Machinery & Equipment				
Building				
Land				
Land Improvements				

LIABILITIES**FORM 25 & 26**

LN	BEGINNING	ENDING
	Modified Cost Basis	Modified Cost Basis
Charge Accounts		
Non-Farm Notes (Current)		
Non-Farm Notes & Mortgage (Long Term) (Real Estate)		
Other Non-Farm Liabilities (Interest & Taxes)		
Short-Term Farm Notes Payable		
Accounts Payable		

LF	BEGINNING	ENDING
	Modified Cost Basis	Modified Cost Basis
Portion Intermediate-Term Debt Next Year (Annual Payment)		
Portion Long-Term Debt Next Year (Annual Payment)		
Accrued Liabilities (Tax)		
Accrued Liability Interest		
Other Farm Current Liabilities (Rent & CCC Loans)		
Portion Intermediate-Term Debt After Next Year		
Life Insurance Loans		
Portion Long-Term Debt After Next Year (Real Estate Mortgages)		
Other Farm Long-Term Liabilities (Land Contracts)		
Contingent Tax Liability		

FBMA Analysis Input Form
Completing the Assets and Liabilities

Assets and Liabilities: Complete each line that is not darkened out. The lines darkened out are picked up by the computer program. The quality of the net worth statement will depend on the entries made on these forms. The entries are the same as Forms 25 and 26. Most of the asset and liability entries are self-explanatory; but following are a few suggestions.

- A. **Stocks + Bonds:** Anyone can own these items and as such are non-farm assets.
- B. **Other Non-Farm:** Household items, boats, guns, and any personal assets of value go into this category.
- C. **Accrued Liabilities:** If you plan to farm this year, own property, or have liabilities you will have to pay taxes and interest. They are both current liabilities and are a part of a complete net worth statement.

ENTERPRISE COST ALLOCATION

FORM 31

CA	ENTERPRISE	ENTERPRISE	ENTERPRISE	ENTERPRISE	ENTERPRISE	TOTAL
Vet., Medicine						
Breeding Fees, Regr.						
Fertilizer, Lime						
Crop Chemicals						
Seeds, Crop Supplies						
Machinery Repairs, Maint.						
Building, Fence Repairs						
Machine, Truck Hire						
Cash Rent/Landlord Settlement						
Power, Fuel, Oil & Gas						
Hired Labor						
Insurance						
Landlord Acres Other						
Long Term Principal						
Taxes						
Utilities						
Truck Expense (Freight & Trucking)						
Auto Expenses						
Misc. Farm Expenses						
Interest						
Soil & Water Conservation						
Drying & Storage						
Livestock Supplies						
Machinery Depreciation						
Building Depreciation						
Landlord Acres Crop						
Family Living Expenses/Taxes						

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FBMA Analysis Input Form
Completing Enterprise Cost Allocation

Enterprise Cost Allocation: These costs are the operator's cost only. This form can be used to reflect all cost or any selected costs. It can be used for individual enterprises or all enterprises. The more complete the form the better the enterprise records.

Note:

- A. **Landlord Acres Other:** If you rent farm buildings and have expenses on them and the landlord doesn't reimburse you, you would report them here.
- B. **Landlord Acres Crops:** All crop expenses on the landlord share which you were not reimbursed for are reported here.

Example: If you 2/3-1/3 share crop and you pay all expenses, 1/3 of the fertilizer, seed, chemicals, and other costs would go to Landlord Acres Crops.

C H E C K S H E E T

This form checks what happened with the farm receipts, farm expenses, inventory, and production for the year. If the form balances, it will help assure that the records are complete.

The left side of each enterprise line should equal the right side. If this does not occur, you need to find the error. When you find the error, be sure and correct the change to the proper input page. A change on the checksheet will not change the records for you.

LIVESTOCK CHECK SHEET

Beef		+		+		=		+		+		+	
	(Beg. Inv.)		(No. Pur.)		(No. Born)		(Close. Inv.)		(No. Sold)		(No. Died)		(No. Consumed)
Dairy		+		+		=		+		+		+	
	(Beg. Inv.)		(No. Pur.)		(No. Born)		(Close. Inv.)		(No. Sold)		(No. Died)		(No. Consumed)
Hogs		+		+		=		+		+		+	
	(Beg. Inv.)		(No. Pur.)		(No. Weaned)		(Close. Inv.)		(No. Sold)		(No. Died)		(No. Consumed)
Sheep		+		+		=		+		+		+	
	(Beg. Inv.)		(No. Pur.)		(No. Born)		(Close. Inv.)		(No. Sold)		(No. Died)		(No. Consumed)

OTHER CHECK SHEET

	+		=		+	
Beg. Loan Balance		Money Borrowed for Year		Ending Loan Balance		Principal Payments

CROP CHECK SHEET

Corn		+		+		=		+		+			
	(Bag. Inv.)		(Bu. Rad.)		(Bu. Pur.)		(Close. Inv.)		(Bu. Fed.)		(Bu. Sold)		
Soybeans		+		+		=		+		+		+	
	(Bag. Inv.)		(Bu. Rad.)		(Bu. Pur.)		(Close. Inv.)		(Bu. Fed.)		(Bu. Sold)		(Used for Seed)
Wheat		+		+		=		+		+		+	
	(Bag. Inv.)		(Bu. Rad.)		(Bu. Pur.)		(Close. Inv.)		(Bu. Fed.)		(Bu. Sold)		(Used for Seed)
Milo		+		+		=		+		+			
	(Bag. Inv.)		(Bu. Rad.)		(Bu. Pur.)		(Close. Inv.)		(Bu. Fed.)		(Bu. Sold)		
Legumes/ grasses		+		+		=		+		+			
	(Bag. Inv.)		(Tons. Rad.)		(Tons. Pur.)		(Close. Inv.)		(Tons. Fed.)		(Tons. Sold)		
Corn/ sorghum silage		+		+		=		+		+			
	(Bag. Inv.)		(Tons. Rad.)		(Tons. Pur.)		(Close. Inv.)		(Tons. Fed.)		(Tons. Sold)		
Other Crops		+		+		=		+		+			
	(Bag. Inv.)		(Amt. Rad.)		(Amt. Pur.)		(Close. Inv.)		(Amt. Fed.)		(Amt. Sold)		
Protein- mineral/ mixed feed		+		=		+		+					
	(Bag. Inv.)		(Lbs. Pur.)		(Lbs. Sold)		(Lbs. Fed)		(Brl. Inv.)				
		+		+		=		+		+			
	(Bag. Inv.)		(Bu. Rad.)		(Bu. Pur.)		(Close. Inv.)		(Bu. Fed.)		(Bu. Sold)		

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FARM BUSINESS MANAGEMENT ANALYSIS

Unit II: Analyzing the Farm Business

Lesson 3: Methods of Tax Management

A. Review

The previous lesson, Summarizing the Year's Records, should be reviewed. List all conclusions reached at your last meeting. Possible conclusions may have included:

1. An analysis of records is only as accurate as the figures that are used.
2. Summarizing the record book will be a simple job if it has been kept up-to-date correctly during the year.
3. The further you go in the record book before finding errors, the longer it will take to get them corrected.
4. A checklist should be followed when summarizing the record book to insure that nothing is left out.
- 5.

B. Objective

To be able to check the computer-prepared 1040F for accuracy and to organize other data needed to complete income tax returns.

C. Motivation

Ask the group how much extra income tax a farmer in the 35 percent marginal tax bracket would pay if an expense of \$100 were omitted. (\$35) What if \$1,000 were overlooked? (\$350) Next, what if \$5,000 worth of receipts were omitted? (pay penalty, interest, etc., if audited) Remember that the 15.3 percent FICA and additional state taxes (in most cases, 6 percent) were not included in the configuration. Thus, accuracy on tax returns is critical. Learning how we check for accuracy and get other information together for a tax preparer or for personal use is the goal of this lesson.

D. Key Points

Key points that will be accomplished are as follows:

1. *How is the 1040F that is received from the computer program checked and verified?*
2. *What other information will I need for tax preparers?*
3. *What items are on a tax checklist?*
4. *What management changes can I make next year to maximize after-tax income?*

E. Introduction of Information

Start the introduction of information by pointing out that if records turned in on the end-of-the-year summary were complete and correct, the only errors possible on the 1040F would be those resulting from incorrectly entering the data into the computer.

1. *How is the 1040F that is received from the computer program checked and verified?*
 - a. Refer to the Form 27--Cash Flow summary in the Sample Entries for the Missouri Farm Business Record Book (Answer Key), and 1040F and Depreciation Schedule from the FBMA sample analysis forms. Let the enrollees compare the cash flow (Form 27) with the entries on the 1040F. These figures should be identical; however, you may need to point out the following:
 - (1) Livestock supplies on the 1040F is Line 55 on the cash flow.
 - (2) Machinery and building repairs on the cash flow, Lines 48 and 49, are combined on the 1040F, line 28.
 - (3) In this example, only the farm share of utilities was entered in the farm expense section. The other share went to the family living section each month.
 - (4) In this example, if there were farm shares of auto expenses and light truck expenses, they would be entered on line 13 of the 1040F. Enrollees that use a mileage charge for their vehicles would enter that charge here.

- (5) The cost of non-breeding livestock purchased during the year was entered on Line 58 of the cash flow. This may not be the same as the figure on the 1040F because the cost of purchased livestock is deducted only in the year it is sold.
- (6) Capital purchases, principal paid, family living, etc., do not appear on the 1040F.
- (7) The example 1040F shows both cash and accrual method. Enrollees will have only the method they use in reporting taxes completed on their return. An important point on depreciation: Always cross-check figures, as well as purchases and sales, to be sure that all transactions are included.

If entries to this point check, then the computer-prepared 1040F can be used to file income taxes.

2. *What other information will I need for tax preparers?*

- a. Refer to the Financial Summary (cash flow/financial statement) part of the FBMA sample analysis forms. It has information on it that is needed on other forms that are required for completing income tax forms. Refer to the following for points to clarify in completing the other forms:
 - (1) For Capital Gains and Losses Tax Forms, use Schedule D and Form 4797. Note that the information for these forms comes from the depreciation schedule. Special note: The sale of purchased breeding stock that was on the depreciation schedule will have a summary prepared on the depreciation schedule similar to the machinery and buildings on the example. For this reason, it will be to the enrollees' advantage if they put all purchased breeding stock on the depreciation schedule.
 - (2) Sale of Raised Breeding Stock. LIVESTOCK HELD FOR BREEDING (on the financial summary (pink) form) equals the sale of both raised breeding livestock and purchased breeding livestock. To arrive at the amount to enter on Schedule 4797 for raised breeding livestock, subtract from the LIVESTOCK HELD FOR BREEDING figure the amount received for PURCHASED BREEDING LIVESTOCK SALES (found in the summary of the Depreciation Schedule).

- b. Point out that most of the information for supplemental income schedule forms comes from the other forms. There will be a need for other information such as:

- (1) Off-farm income. Usually W-2s from employers provide this information. Information about income from town rental property, as an example, will need to come from a different source.
- (2) Non-farm and itemized deductions. These come from other records.

3. *What items are on a tax checklist?*

Show TM-3.2 to identify some items that are frequently overlooked. This list is not meant to be complete but highlights a few items that apply to farmers. Members of the group can probably add to it. Also, if enrollees have not been given copies of the Farmer's Tax Guide, Publication 225 (free from the FBMA state office), this would be an opportunity to distribute them.

4. *What management changes can I make next year to maximize after-tax income?*

- a. Show TM-3.1 and discuss it. See if any of the enrollees can identify a management change they need to make to maximize after tax income.
- b. Show TM-1.1 and TM-1.2 (from Lesson 1) and discuss. These are some ideas on techniques to use in shifting income from one year to another.

F. Discussion

Discussion should center on points that the individual enrollees can use in the coming year as tax planning strategies. These could be listed on the board as suggested by the group.

G. Conclusions

Conclusions that may be reached include:

- 1. The 1040F should be checked for accuracy with Form 27--Cash Flow summary.
- 2. Some expense items are grouped when transferred to the 1040F.

3. Information for tax forms in addition to the 1040F is also on the computer printout.
4. A checklist of items to consider should be used prior to completing the tax forms.
5. Highlights of points identified this year in tax management should be referred to next year as management decisions are made.
- 6.

Announcements

Next meeting, we will be discussing how to plan next year's livestock and cropping programs and cash flow.

Social

Individual Instruction

When meeting with enrollees following this lesson, the discussion can center on checking the 1040F and reviewing tax activities to insure complete and accurate returns.

Materials Needed

Instructor

TM-3.1 Methods of Tax Management
TM-3.2 Tax Check List
TM-1.1 (Lesson 1) Methods to Increase Income
TM-1.2 (Lesson 1) Methods to Delay Income
FBMA sample analysis forms
Sample Entries for the Missouri Farm Business Record Book
(Answer Key)

Student

FBMA sample analysis forms
Missouri Farm Business Record Book
Farmer's Tax Guide

METHODS OF TAX MANAGEMENT

1. Maintain Complete And Accurate Records.
2. Review Farmer's Tax Guide For Changes.
3. Maintain "Even" Level Of Income.
4. Use The Proper Depreciation Method To Match The Situation.
5. Use Expensing (Section 179) As A Benefit.
6. Use Capital Gain Provisions.
7. Use A Checklist Of Allowable Deductions To Be Sure All Are Claimed.

TAX CHECK LIST

Deductions:

- A. Dues to farm organizations.
- B. Costs of reference and business material and farm magazines (must relate to farm needs).
- C. Farm share of utility (including phone, electricity, office part of heat) bills.
- D. Postage, stationery, records, etc.
- E. Office in home (depreciation on that part, electricity, heat, etc.). Check for qualifications.
- F. Safety deposit box rentals for farm use.
- G. Wages paid to spouse and/or children (this has many tax advantages if you qualify) and/or letting spouse and/or children own livestock, crops, etc.
- H. Mileage on family car for farm business (including attending adult farm classes).
- I. Mileage on family car for charitable and medical purposes if itemize deductions.
- J. Political contributions.
- K. Cost of a baby sitter so spouse can help with farm work. (Check limitations.)
- L. Interest in an amortized loan.
- M. Cost of purchased livestock that are lost, strayed, stolen, or dead.

Things to Consider:

- N. Alternative forms of business organization (partnership, corporation) may be wise if taxes are high.
- O. Set up a retirement plan. (Get help on this one.)

- P. If age 63 or 64, consider delaying income to 65 to get double exemption.
- Q. At retirement, shift income to rents, interest, etc.
- R. Itemize all entries on bank deposit slips.
- S. Make an estimate of taxes prior to year's end so adjustments can be planned. (Use the current version of computer program from FBMA state office.)
- T. Use "deferred" receipts if sales are because of drought, etc.
- U. Check for "earned income credit."

NOTE: Always refer to the latest tax updates and information concerning deductions/expenses.

FARM BUSINESS MANAGEMENT ANALYSIS

Unit II: Analyzing the Farm Business

Lesson 4: Planning Next Year's Livestock and Cropping Programs and Cash Flow

A. Review

The previous lesson, Methods of Tax Management, should be reviewed. List all conclusions reached at your last meeting. Possible conclusions may have included:

1. The 1040F should be checked for accuracy with Form 27--Cash Flow summary.
2. Some expense items are grouped when transferred to the 1040F.
3. Information for tax forms in addition to the 1040F is also on the computer printout. A checklist of items to consider should be used prior to completing the tax forms.
4. Highlights of points identified this year in tax management should be referred to next year as management decisions are made.
- 5.

B. Objective

To determine estimated costs and returns for next year and plan next year's cash flow.

C. Motivation

Hand out the High-Low Pricing Outlook worksheet (HO-4.1) for the enrollees to complete. Ask the enrollees to write down next year's estimates of average prices for commodities common to everyone. List some of the figures on the board and let people give their reasons for making the estimates. Do not try to arrive at a consensus at this point. Next, ask them which of two enterprises common to the community (such as corn versus beans or beef cows versus backgrounding calves) will be the most profitable next year. Again, do not try to arrive at a consensus. Let enrollees discuss reasons for opinions and then point out that the objective of our lesson is to determine the costs and returns we can use in planning a cash flow for next year.

D. Key Points

Key points that will be accomplished are as follows:

1. *How do I develop costs and returns for various crops in our area for next year?*
2. *How do I develop costs and returns for livestock enterprises in our area for next year?*
3. *How are these estimates entered on Form 27?*
4. *What are some additional returns?*

E. Introduction of Information

Explain that the first part of the class will involve developing projected budgets for different crop and livestock enterprises. This will give us an idea of the relative profitability of enterprises for next year and an idea of projected costs and returns for our cash flow.

1. *How do I develop costs and returns for various crops in our area for next year?*

Depending on the size of the class, divide enrollees into groups of about 2 or 3 couples each. Ask each group to work on a different crop budget to determine relative profitability of various crops.

Have enrollees refer to HO-4.2 and fill in the entries. One of the best sources for this information is their FBMA analysis forms. If this information is not available, the state averages compiled by the state FBMA office would be a good guide. Another source would be the Manual 75 information published by IML.

- a. Some general hints for using the Cash Flow Planning Sheet - Per Acre forms are:
 - (1) Let the small groups do forms for an average situation in the community where the farmer owns all the land. Compare the results on various crops.
 - (2) Let the small groups do forms with a typical community crop, share and/or cash lease arrangement. Include only the renter's share of expenses and returns. Compare these results.

- (3) Determine the percent of crop yield that would need to be hedged or forward priced at today's futures prices to cover operating cost per acre. If this is in the 20-25 percent range, should this be considered?
- b. Distribute copies of the forms to each family to let them plug in their own figures. As an example, some families may need two or three forms for corn because they may have different rental agreements or yield expectations. A limited amount of time can be allowed for this activity; however, most families will probably want to do most of this at home.
- c. The FBMA state office will have an updated set of standard input costs for cash flow planning like those in HO-4.4. A copy of this information should be presented at this time.

2. *How do I develop costs and returns for livestock enterprises in our area for next year?*

Divide the class into groups as done for the crop section, but try to group by interest or involvement in enterprises this time. Distribute HO-4.3. Ask the groups to develop their own figures for the entries.

- a. Some general hints for using the Cash Flow Planning Sheet - Per Head Or Unit forms are:
 - (1) Encourage the group to do more than one form per enterprise by changing factors such as litter size, litters per year per sow, amount of hay and pasture charged to a beef cow, etc. Compare the results of the various forms on the board and discuss feasibility of each presented situation.
 - (2) Determine the effect of forward contracting, hedging, or using options on 25-30 percent of the anticipated production at current opportunities for the next six months to cover cash operating costs. Discuss the feasibility of some of the group considering this in their cash flow planning.

3. *How are these estimates entered on Form 27?*

Because everyone in the group worked on Unit I, Lesson 4--Planning the Year's Cash Flow, last year and has completed a cash flow to date, the emphasis on this key point will be to update the coming year's cash flow.

- a. Show TM-4.1. Review these points briefly, as they were discussed last year.
- (1) Planning crop and livestock programs. The crop and livestock budgets developed in key points 1 and 2 above should provide the basis for enrollees to make these decisions this year. They can refer to last year's cash flow summary to make a projection of timing and amounts of receipts and expenditures, considering the budgets that apply to their farm business.
 - (2) Estimating repairs, overhead costs, and purchase/sale of capital items. Amounts from last year's cash flow summary plus inflation should provide a reasonably accurate projection for the coming year for these items.
 - (3) Estimating family and "off-farm" income. Let each family complete a Form 28 using last year's actual figures as a guide. If records for past years are not available, HO-4.5 on Estimated Family Living will serve as a guide for family living estimates.
 - (4) Completing the cash flow form. Provide a copy of Form 27 for each couple and have them start completing the form for their situation for next year. Do not use enough class time for them to complete the form in class. There will probably be several things the couples will want to discuss privately prior to completing the form, and the individual meeting this month is an opportune time to work individually on these.
 - (5) Adjusting the tentative planned cash flow. Review the procedure for identifying credit needs and repayments and methods of making adjustments to arrive at the planned cash flow.

4. *What are some additional returns?*

Identify some items that may change this coming year that have not been discussed previously and that will have an effect on the planned cash flows. The following list is not meant to be complete, but may stimulate some ideas:

- a. Discussion points
- (1) ASCS target prices, loan rates, etc.

- (2) Federal Crop Insurance Programs.
- (3) ASCS cost share programs.
- (4) Support price changes (as for dairy).
- (5) Interest rate changes.
- (6) Other.

- b. Encourage the group to consider these changes in their planned cash flows.

F. Discussion

Let the group discuss application of ideas developed throughout the lesson. If possible, have a local credit person meet with the group to share ideas on changes in budgets, importance of cash flow planning, and financing problems for the coming year.

G. Conclusions

Conclusions that may be reached include:

1. Budgets for crop and livestock enterprises should be developed annually.
2. This year's cash flow summary provides the base for planning next year's.
3. Budgets for owned and rented crop land should be developed separately.
4. Consideration might be given to some price protection as discussed in Key Points 1 and 2.
- 5.

Announcements

The individual visits for this month will be used for cash flow planning. Next meeting, we will discuss how to analyze the profit/loss statement.

Social

Individual Instruction

Ask each couple to complete Steps 1, 2, and 3 of TM-4.1 prior to your meeting this month. You can review this information and assist in completing Form 27. You will need Manual 75, some extra Form 27s, a calculator, some outlook information, and the farmer's Form 27 (current year). Also, review the farm and family goals prior to the meeting in order to help direct planning to reach those goals. Helping with needed adjustments is the most important and critical task to accomplish during the meeting, along with making sure the enrollees have or will have an up-to-date Form 27 completed by the next meeting.

It would be advantageous for you to visit with local credit people and discuss procedures for planning a cash flow with them so that you have a better feel for local policies and receive their support.

Materials Needed

Instructor

TM-4.1 Steps in Planning a Cash Flow
FBMA sample analysis forms
Manual 75
Form 27 (extra copies)
Calculator
Outlook information

Student

HO-4.1 High-Low Pricing Outlook
HO-4.2 Cash Flow Planning Sheet - Per Acre
HO-4.3 Cash Flow Planning Sheet - Per Head or Unit
HO-4.4 Sample Standards
HO-4.5 Estimated Family Living
Missouri Farm Business Record Book
Individual FBMA analysis forms (use state averages from FBMA
state office if not available)

STEPS IN PLANNING A CASH FLOW

1. Planning Crop and Livestock Programs
2. Estimating Repairs, Overhead Costs, and Purchase/Sale of Capital Items
3. Estimating Family Living and "Off-Farm" Income
4. Completing the Cash Flow Form
5. Adjusting the Tentative Planned Cash Flow

HIGH-LOW PRICING OUTLOOK

NAME	High		Low	
	Month	Price	Month	Price
240# Hogs				
60# Feeder Pigs				
450-500# Steers				
700# Steers				
1050# Steers				
Soybeans/bushel				
Corn/bushel				
Milo/bushel				
Wheat/bushel				
110# Fat Lambs				
Alfalfa Hay/ton				
Grass Hay/ton				
Stock Cows/head				

CASH FLOW PLANNING SHEET-
PER ACRE

Crop Enterprise: _____

Total Acres: _____

	Per Acre Guide or Averages	Per Acre 19____ Actual	Per Acre 19____ Planned	Total* Farm
Fertilizer				
Chemicals				
Seed				
Drying & Storage				
Utilities Farm Share				
Machine Repair				
Machine Hire				
Fuel & Oil				
Auto Farm Share				
Interest				
Hired Labor				
Building Repair				
Insurance				
Taxes				
Miscellaneous				
Cash Rent				
TOTALS				

*Total Acres times Per Acre Cost per item.

CASH FLOW PLANNING SHEET -
PER HEAD OR UNIT

Livestock Enterprise: _____

	Guide or Averages	19____ Actual	19____ Planned	Total Ent.
Fertilizer for Pasture				
Utilities				
Machine Repair				
Machine Hire				
Fuel & Oil				
Auto Farm Share				
Interest				
Hired Labor				
Building Repair				
Insurance				
Taxes				
Vet Costs				
Breeding Fees				
Livestock Supplies				
Miscellaneous				
Cash Rent				
TOTALS				

SAMPLE STANDARDS*

(\$55,500) 1992 S.S. 7.65% 15.3		
	January Inventory	Cash Flow
Corn	\$ 2.20	\$ 2.30
Soybeans	5.90	6.20
Milo	2.10	2.20
Wheat	4.00	3.60
Sheep		
Ewes	75.00	100.00
Lambs	60.00	64.00
Hogs 60#	40.00	38.00
150#	60.00	55.00
240#	41.00	44.00
Sows	36.00	38.00
Boars	150.00	450.00
Bulls	1,000.00	1,500.00
Cows (large)	700.00	750.00
(medium)	500.00	650.00
Fat Cattle	72.00	74.00
600#	85.00	80.00
400#	95.00	90.00
Hay		
Alfalfa/ton	60.00	60.00
Fescue/ton	35.00	35.00
Timothy/ton	40.00	40.00
Clover/ton	45.00	45.00
Grass, Mixed/ton	40.00	40.00
Soybean Meal 44%	Ton 190.00	
Hog Supp. 40%	Ton 267.00	
Fertilizer		
N. \$.19		
P. \$.20		
K. \$.14		
Ammonia \$160		
Seed Corn \$70.00/bag	Land \$606.00 ac.	
Seed Beans \$10.00/bag Variety \$12.00	Crop \$700.00 ac.	
Seed Milo \$38.00	Past. \$300.00 ac.	

*This form is updated each year by the state FBMA office.

ESTIMATED FAMILY LIVING
(Family of four, operator's average age of 43)

Item	Average Expenses	Your Estimate
Cash Expenses for Living		
Food purchased	5,327.00	
Clothing and personal items	5,583.00	
Household operations	1,612.00	
Repairs, minor furnishings	599.00	
Health	4,447.00	
Recreation, vacation	1,858.00	
Education	1,616.00	
Giving	1,343.00	
Auto operating expenses	2,044.00	
Miscellaneous, child care	1,272.00	
Total cash living expense	25,701.00	
Investments for Living		
Home improvement	879.00	
Home furnishing, equipment	625.00	
Automobile purchase	639.00	
Total investments for living	2,143.00	
Life insurance	1,913.00	
Total cash expenditures	29,757.00	
Farm produce used	128.00	
Total used for living	29,885.00	

SOURCE: IOWA STATE UNIVERSITY-COOPERATIVE EXTENSION SERVICE

Note: This is only a sample guide; it does not include rent, home mortgage interest, or non-farm taxes.

FARM BUSINESS MANAGEMENT ANALYSIS

Unit II: Analyzing the Farm Business

Lesson 5: Analyzing the Profit/Loss Statement

A. Review

The previous lesson, Planning Next Year's Livestock and Cropping Programs and Cash Flow, should be reviewed. Key items that caused problems during individual instruction sessions should be emphasized. Also, this is a good time to discuss problems enrollees may have encountered while preparing Forms 27 and 28--Cash Flow for this lesson (refer to information presented in Lessons 3 and 4 of Unit I). The conclusions from the previous lesson could also be listed on the board. Possible conclusions may have included:

1. Budgets for crop and livestock enterprises should be developed annually.
2. This year's cash flow summary provides the base for planning next year's cash flow.
3. Budgets for owned and rented crop land should be developed separately.
- 4.

B. Objectives

To analyze the Profit/Loss statement and make management decisions based on the interpretation of it.

C. Motivation

Show TM-5.1. This will give you an opportunity to start the discussion by indicating that it takes time to evaluate and repair a watch-- just as it does a farm business. A "quick fix" in both cases may give bad results. Knowing what to look for and asking the correct questions are essential to getting the correct answers.

D. Key Points

Key points that will be accomplished are as follows:

1. *How is income measured?*
2. *How can I make a comparison with similar businesses?*
3. *How do I identify areas that need improvement?*
4. *How do I use this information to plan for the future?*

E. Introduction of Information

Refer to the FBMA sample analysis forms (blue sheet) to review the Income and Expenses statement and the Farm Returns and Costs statement. After the class has had an opportunity to review the figures briefly, ask them how much profit this farmer realized this year. Several different answers will probably be suggested. Jot these on the board to emphasize the range in opinions based on results from the same business. Identifying the answer to this question and looking at ways to identify methods of improvement is the topic for this class.

1. *How is income measured?*

- a. Cash Available--Ask the group to identify the amount of cash sales this farmer had (TOTAL CASH OPERATING INCOME), and list \$176,469 on the board. How much were the cash expenses? Cash operating expenses of \$84,949 (TOTAL CASH OPERATING EXPENSE) plus purchased feed and purchased livestock of \$37,568 and \$1,470 (PURCHASED FEED and PURCHASED LIVESTOCK) equals \$123,987, which can be listed on the board. The difference between cash sales and cash expenses equals \$176,469 - \$123,987, or \$52,482. Is that the profit? Would the farmer pay income tax on this amount? What is not included? The group will identify several items, indicating that they are ready to move to some different measures of income.
- b. Income Before Depreciation--Start down the "Operator" Column and identify items listed that are not cash items:
 - (1) INVENTORY CHANGE. This is the change in the Crops and Feed and Livestock inventories from beginning to end of the year. Inventory adjustments must be included to offset conditions, such as: cash (adequate/inadequate)

conditions with (increased/decreased) inventory changes because of yields and prices.

- (2) ACCTS. RECEIVABLE (net change). This example does not have an entry; this is the change during the year of money owed the farmer. As an example, if custom work were done for a neighbor, but not paid, it would appear here.
- (3) FARM PRODUCTS USED. In this example, \$700 worth of farm products was used on the farm (6 hogs weighing 1,440 lbs.).
- (4) FARM PRODUCED INPUTS. In this example, the amount is zero, as no raised seed was used.
- (5) PREPAID EXPENSE (- if increase) and ACCOUNTS PAYABLE (+ if increase). These lines adjust the two items for changes from beginning to end of the year. The amount in this example includes a \$232 prepaid expense.
- (6) TOTAL OPERATING EXPENSE. TOTAL CASH OPERATING EXPENSE plus FARM PRODUCED INPUTS plus or minus PREPAID EXPENSE and ACCOUNTS PAYABLE. The resulting figure (\$85,181) is the operator's total operating expense. After subtracting TOTAL OPERATING EXPENSE (\$85,181) from GROSS FARM RETURNS (\$137,009), the resulting figure is INCOME BEFORE DEPRECIATION (\$51,828). This is the operator's accrual farm income--the amount available for family living, income tax and social security, debt retirement, and investments, including replacement of capital items. Is it adequate? That depends upon the claims against it. For example, if the farmer had family living of \$18,000, income tax and social security of \$12,000, principal payments of \$35,000, and planned to trade combines for a cash difference of \$40,000, it would not be adequate. For other situations, it might be more than adequate.

- c. FARM OPERATING INCOME. This includes returns for the operator's labor, management, and interest on equity capital, plus any gain or loss on the sale of machinery or buildings. DEPRECIATION has been subtracted from the INCOME BEFORE DEPRECIATION figure to arrive at FARM OPERATING INCOME. Depreciation is taken from the

depreciation schedule and is not a cash cost. Farmers can survive in the short run without covering it; however, they cannot survive in the long run. If everything balanced perfectly every year, a farmer that invested an amount equal to this figure in replacement capital items would always have the same quality level of capital items. In other words, depreciation placed into a separate account would always have enough funds to replace equipment, etc. Some studies have indicated, though, that farmers spend about 150 percent of the depreciation charged each year for capital items, due to inflation and the use of too slow a depreciation method. Net farm income before depreciation on the sample farm was \$51,828 less depreciation of \$20,459.

- d. NET FARM INCOME. This might be thought of as the salary of the operator, which can be compared with other's earnings. The sample farm's net farm income was \$31,369. $\text{NET FARM INCOME} = \text{FARM OPERATING INCOME} + \text{or} - \text{CAPITAL ACCOUNTS ADJUSTMENT \& AMORTIZATION (sale of land or equipment)}$.
- e. OPERATOR(S) LABOR AND MGMT. INCOME. INTEREST ON EQUITY CAPITAL and UNPAID FAMILY LABOR is subtracted from NET FARM INCOME to get this figure. An example for calculating interest charge on equity follows:

	<u>Beg. of Year</u>		<u>End of Year</u>
Livestock	<u>14,880</u>		<u>15,397</u>
Machinery	<u>13,524</u>		<u>12,993</u>
Buildings	<u>32,664</u>		<u>29,736</u>
Soil Fertility	<u>0</u>		<u>0</u>
Subtotal	<u>61,068</u>	+	<u>58,126</u> ÷ 2 = <u>59,597</u>
Crops & Feed	<u>28,525</u>	+	<u>26,886</u> ÷ 4* = <u>13,853</u>
Total Operating Expense (w/o purch. feed or livestock)			<u>85,181</u>
Less Interest Paid			<u>16,393</u>
Subtotal			<u>68,788</u> ÷ 2* = <u>34,394</u>
Total Non-land Investment			<u>107,844</u> @ ¹ = <u>10,245</u>
Land Investment			<u>522,000</u> @ ¹ = <u>20,880</u>
TOTAL INTEREST CHARGE			<u>31,125</u>

*Divisor to equate to 1/2 year investment for crops and feed inventory and for cash operating expense.

¹Check the current year's interest rate used at the state FBMA office.

Notes:

- (1) 4.0% interest charge on land is used in Missouri. This will vary in different years and reflects the average return on land investment received by landlords the preceding year. It is assumed that landlords expect land appreciation or inflation to provide the other needed returns to make land a profitable investment.
- (2) An interest charge of 9.5% was used on non-land investments. This also varies and is based on the average cost of credit paid by farmers for operating money during the year.

- (3) Total interest of \$16,393 was paid during the year. If any interest was due on January 1 as a carryover from the previous year, this should be subtracted from the interest paid. This gives a true picture of interest paid on money owed during this year only.
- (4) The \$16,393 interest is deducted from the Interest Charged to Land and Other (\$31,125) to calculate the interest on equity capital. For the case farm the result is \$14,721 for the operator and \$11 for the landlord (9.5% of \$225 [cash rent] + 2).
- (5) With the method of calculation used, it is possible to have a negative figure on the line for INTEREST ON EQUITY CAPITAL. This would occur with a large debt load on land or machinery.

This measure of farm earnings--OPERATOR(S) LABOR AND MGMT. INCOME--reflects the return to the operator's labor and management. It is the amount remaining after a charge is made for the opportunity cost of time. This figure needs to be positive or the farmer would be better off financially to sell out and invest the equity in alternative investments.

- f. **MANAGEMENT RETURNS.** After a charge is made for the operator's labor, the remaining figure is the return for the farmer's management services.

Many farmers have chosen to work for "free" (not charge for their labor). OPERATOR(S) LABOR AND MGMT. INCOME is the salary that the family will live on, while MANAGEMENT RETURNS should be considered the fee for your management ability.

These various measures of income are of value in different situations. One principle of management is to measure return to the most scarce resource. As an example, a young farmer with capital as the most limiting resource would be most interested in the OPERATOR(S) LABOR AND MGMT. INCOME figure. An older farmer that is slowing down may be most interested in INCOME BEFORE DEPRECIATION or NET FARM INCOME. This farmer may be willing to "live off of the interest," while the young farmer has to pay interest.

Sometimes, young farmers attempt to operate a farming program

similar to those used by their fathers or neighbors. Even though it may be a very successful program for the father, who may be debt free and have \$25,000 to \$30,000 to live on, it may not work for the younger family because the interest and principal payments alone may equal more than the \$25,000 to \$30,000.

2. *How can I make a comparison with similar businesses?*

Refer to the FBMA sample analysis forms (blue sheet) FARM RETURNS AND COSTS for this key point.

- a. Compare "MY FARM" with "AVERAGE FARM." For the interpretation of this portion, the figures relate to the Average Missouri Livestock Farm, 600+ acres in 1992. All of the measures of FARM RETURNS and FARM COSTS can be compared. Two examples may illustrate. The "MY FARM" SOIL FERTILITY was \$3.57 higher than the "AVERAGE FARM." Also, the MACHINE HIRE/LEASE was \$2.60 higher for "MY FARM" than the "AVERAGE FARM." The question that must be answered is--if this much extra was spent on an input (or all inputs) compared to the average, did the returns go up an equal or greater amount? If not, the input cost should be checked. One other point should be checked: Was this a "normal" year?
- b. Develop comparative charts and/or trend charts.
 - (1) Instructors should develop a comparative chart for each enrollee as used in the example on HO-5.1. Because farms are grouped for averaging purposes into similar type farms, the "AVERAGE FARM" Column can be used to indicate the average. An explanation of each procedure is listed below.
 - (a) Ten measures of the farm business are listed on HO-5.1. The chart is divided into ten divisions above and below average. The following is an explanation of calculating each of these measures using the sample farm business information on the FBMA sample analysis forms.
 - 1) OPERATOR'S NET FARM INCOME: It is suggested that the average operator's net farm income be inserted on the "AVERAGE" line of the chart. Each line above and below can be in \$10,000 increments. Darken in

the blank column under (1) to the point of the enrollee's Net Farm Income. The sample farm had an NFI of \$31,369 in 1992, while the average Missouri Livestock Farm operator in 1992 had an Operator's Net Farm Income of \$44,167.

- 2) OPERATOR'S MANAGEMENT RETURNS: Use the same procedure as in 1) above, but use \$5,000 increments because the range in figures is smaller. The sample farm analysis printout is <\$91>, while the average Missouri Livestock Farm was \$14,297 in 1992. <negative amounts>

Note: When the sample farm example was written, prices received for livestock were lower than in current comparisons.

- 3) MANAGEMENT RETURNS/TILLABLE ACRE: Use the same procedure in 1) and 2) above, but use an increment of \$10. The sample farm is <\$.14>, while the Average Missouri Livestock Farm returned \$34.13 in 1992.
- 4) INDEX OF GROSS VALUE FARM PRODUCTION/TILLABLE ACRE: Divide the operator's Gross Value of Farm Production Per Tillable Acre by the figure for the average Missouri Livestock Farm and multiply by 100 to obtain the index. For the sample farm: $187.68 \div 267.35 = .70 \times 100 = 70\%$. As previously stated, darken in the blank column under (4) to your index value. In this example, the sample farm is 30% below the Average Missouri Livestock Farm in 1992.
- 5) INDEX OF CROP RETURNS/TILLABLE ACRE: Use the same procedure as in 4) above. For the sample farm: $131.97 \div 161.60 = .82 \times 100 = 82\%$. Darken in the blank column under (5). Remember that when the index is below 100, you are below the Average Missouri Farm.

- 6) **INDEX OF MAJOR CROP YIELDS:** Identify the major crops for the farm by checking the "Land Use" Column on INCOME AND EXPENSES (FBMA sample analysis forms), and calculate an average index.

For the sample farm, 22.6% of the land was in corn with a yield index of 76 (105 [sample farm yield per acre] $\div$ 138 [average Missouri Livestock Farm yield per acre] $\times 100 = 76$); 22.6% in soybeans with a yield index of 72 (28 [sample farm yield per acre] $\div$ 39 [average Missouri Livestock Farm yield per acre] $\times 100 = 72$); and 22.6% in wheat with a yield index of 78 (32 [sample farm yield per acre] $\div$ 41 [average Missouri Livestock Farm yield per acre] $\times 100 = 78$).

The Index of Major Crop Yields is 75 [$(76 + 72 + 78) \div 3 = 75$].

- 7) **INDEX OF PERCENT LAND IN HIGH RETURN CROPS:** High return crops are usually identified as corn, milo, wheat, soybeans, cotton, rice and alfalfa. Corn silage may be in the group depending on the profitability of the livestock enterprise to which it is fed. The fescue seed/hay combination is one of the more profitable forage crops in some areas of the state. To determine the index, identify the percent of land in High Return Crops on the operator's farm compared to the average. For the sample farm 22.6% is in corn, 22.6% in soybeans and 22.6% in wheat for a total of 67.8% in high-return crops. The Average Missouri Livestock Farm had 14.9% in corn, 28.8% in soybeans, 8.8% in wheat, 8.2% in milo, 1.1% in corn silage, .3% in haylage, and .2% in alfalfa for an index of 108 (62.3%). The index is figured by dividing the sample farm percent by the state average percent ($67.8 \div 62.3 \times 100 = 108$).

- 8) **INDEX OF PRICES RECEIVED FOR MAJOR ENTERPRISES:** Determine the Index of Prices Received for each of the major enterprises for the farm. Grain prices are in the current FBMA Summary of Records. For the sample farm, soybeans and wheat were sold, while all corn was fed. The index of prices received for soybeans was 117 ($6.61 \div 5.64 \times 100 = 117$); the index for wheat was 106 ($3.31 \div 3.11 \times 100 = 106$). The INDEX OF PRICES RECEIVED FOR MAJOR ENTERPRISES is 112 [$(117 + 106) \div 2 = 112$].

****Note:** When the sample farm example was written, the prices received for grain were slightly higher than in the 1992 comparison.

- 9) **INDEX OF LIVESTOCK RETURNS ABOVE FEED/TILLABLE ACRE:** Divide the LIVESTOCK RETURN ABOVE FEED for the sample farm (54.53) by the Average Missouri Livestock Farm (94.34) and multiply by 100 to get the index of 58 for 1992. The sample farm is 42% below the Average Missouri Livestock Farm.

- 10) **INDEX OF NON-FEED COSTS/TILLABLE ACRE:** Because this is a measure of a cost, rather than a return like all previous examples, the index calculation is reversed. Divide the Average Missouri Livestock Farm figure by the sample farm figure times 100 to arrive at the index. On the sample farm the index is 124 ($233.82 \div 187.82 \times 100 = 124$).

- (b) After the example is used in class, enrollees could develop this comparative chart for their own farm business in class if they have their FBMA analysis forms. Use HO-5.2 for this purpose. However, this is probably more appropriate as an individual instruction activity with individual enrollees.

- (2) Trend charts of results over a period of years have been can be found in the current FBMA Summary of Records.

These charts from Missouri averages reflect the relationship of the top 1/3 and bottom 1/3 in regards to the Operator's Net Farm Income, Total Management Returns/TA, and Operator's Management Returns.

Involve the enrollees in a discussion of the three trend charts by first explaining how the charts are set up and what they mean. The Operator's Net Farm Income shows the relationship of the top 1/3 and bottom 1/3. One should note weather, world trade, and economic conditions that affect yearly differences.

The Total Management Returns/TA shows the relationship of the top 1/3 and bottom 1/3. These are based on tillable acres. One should note that the incline indicates a relatively consistent increase in efficiency, too. Also, discuss with the enrollees the chart's Operator's Management Returns. This chart also shows the relationship of the top 1/3 and bottom 1/3.

3. *How do I identify areas that need improvement?*

Point out that the work done on the first two key points in this lesson has probably partially answered this question. There are some additional checks we can perform as follows:

- a. Troubleshooting the farm business--Show TM-5.2 and distribute a copy (HO-5.3) to each enrollee. This can be followed through and is probably of most value on an individual basis. The sample farm is low on MANAGEMENT RETURN PER TILLABLE ACRE, so many questions and decisions should follow. Let the families study the situation and suggest some problems they see in the sample farm. CROP RETURNS and LIVESTOCK RETURN ABOVE FEED seem to be two logical places to start the analysis process.
- b. Use an individual worksheet approach--For enterprises that may be of special concern, a more detailed analysis can be made using HO-5.4. As an example, if a farm has a 100 sow farrow to finish operation, and if it should contribute a large part of the income to the farm business, it would be a good plan to check that specific enterprise once a month. Certainly many young farmers that are highly leveraged would need to check their main livestock enterprise once each quarter. Insert end-of-the-month figures for end-of-year and beginning-of-the-month figures for beginning-of-year on HO-5.4 and use other

figures for the period being examined on the appropriate line. Most of the information for using this form as a quarterly or monthly analysis can come from Form 31 in the Missouri Farm Business Record Book.

4. *How do I use this information to plan for the future?*

Several techniques are available for this key point. You will want to check a number of them out and develop some individual strategies. Reliable sources are: Planning the Farm Business (Agricultural Management and Economics Manual 75); Managing for Profit in Commercial Agriculture, Ray C. Ferguson, II; and the yearly printouts of the FBMA program..

Take each farm on an individual basis. At this point in time, we are beginning to use the records for sound management purposes.

F. Discussion

G. Conclusions

Conclusions that may be reached include:

1. Income should be measured to reflect returns to the most scarce resource.
2. Comparisons with similar businesses can be made, but adjustments for normal yields, etc., should be made.
3. Troubleshooting a Farm Business (HO-5.3) provides a step-by-step procedure to identify strengths and weaknesses.
4. Plans for improving the farm business to achieve family goals should be revised annually.
5. There are many good tools that may be used to evaluate the farm business. One should use a combination of tools to begin the process of fixing the farm.
- 6.

Announcements

Next meeting, we will be discussing how to analyze the financial statement and cash flow.

Social

Individual Instruction

Prior to meeting with each enrollee individually, a comparative chart as on HO-5.1 could be developed for each farm to provide a basis for discussion. Based on the needs of the family, other worksheets in the lesson can be used; however, all enrollees should have HO-5.5, First Things First, developed.

Materials Needed

Instructor

TM-5.1 Watch Repair
TM-5.2 Troubleshooting the Farm Business (combined with HO-5.3)
FBMA Summary of Records (current issue)
FBMA Selected Summary Information (current issue)
Missouri Farm Business Record Book
FBMA sample analysis forms

Student

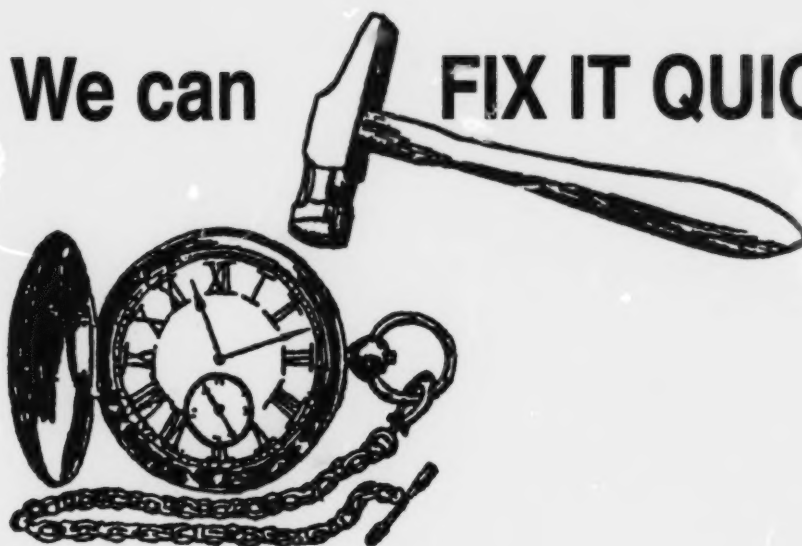
HO-5.1 Profile of Sample Farm Business
HO-5.2 Profile of _____ Farm Business
HO-5.3 Troubleshooting the Farm Business (combined with TM-5.2)
HO-5.4 Calculating Total Returns
HO-5.5 First Things First (distribute in duplicate)
Missouri Farm Business Record Book
FBMA sample analysis forms

Watch Repair



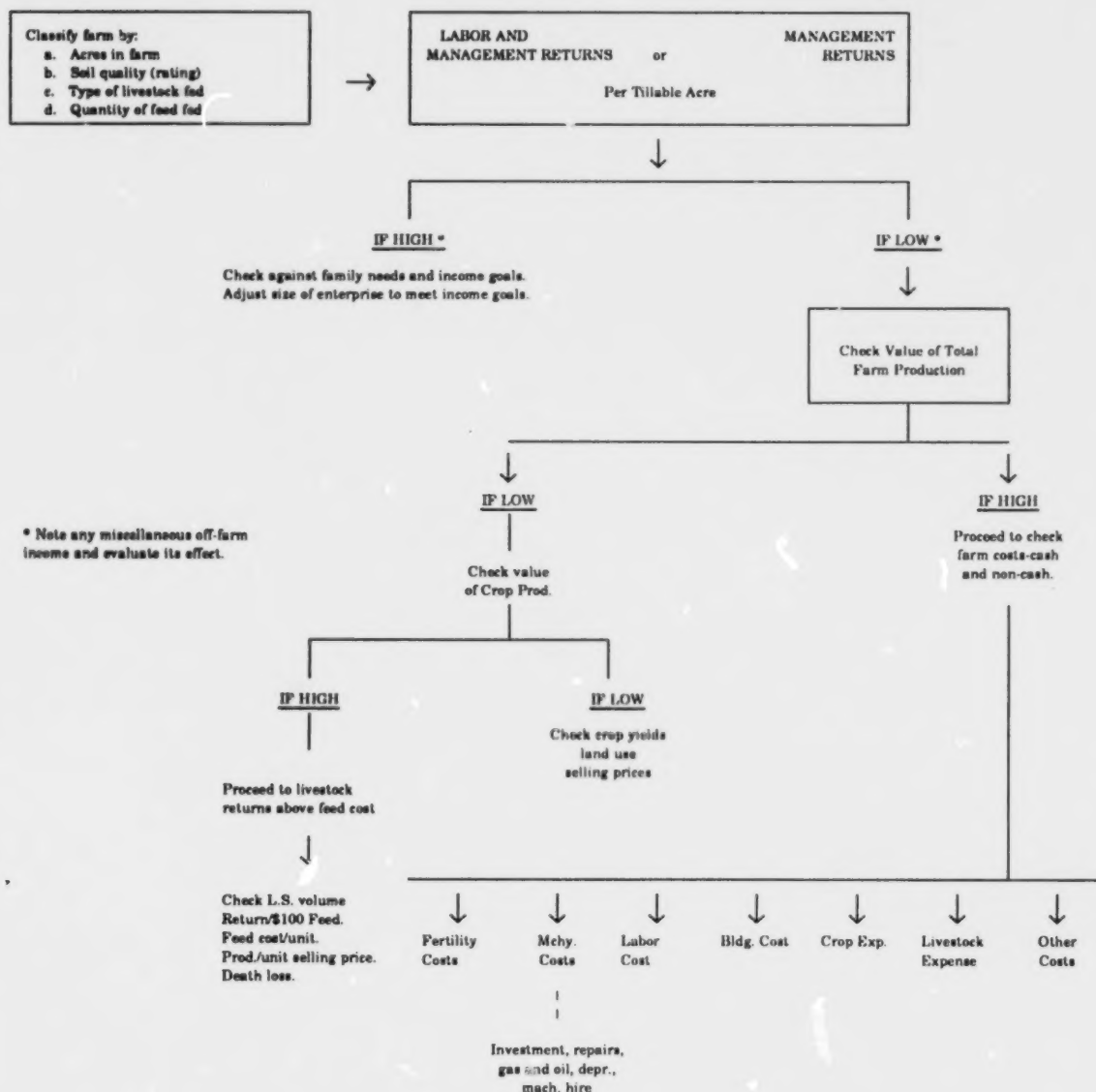
We can

FIX IT QUICK



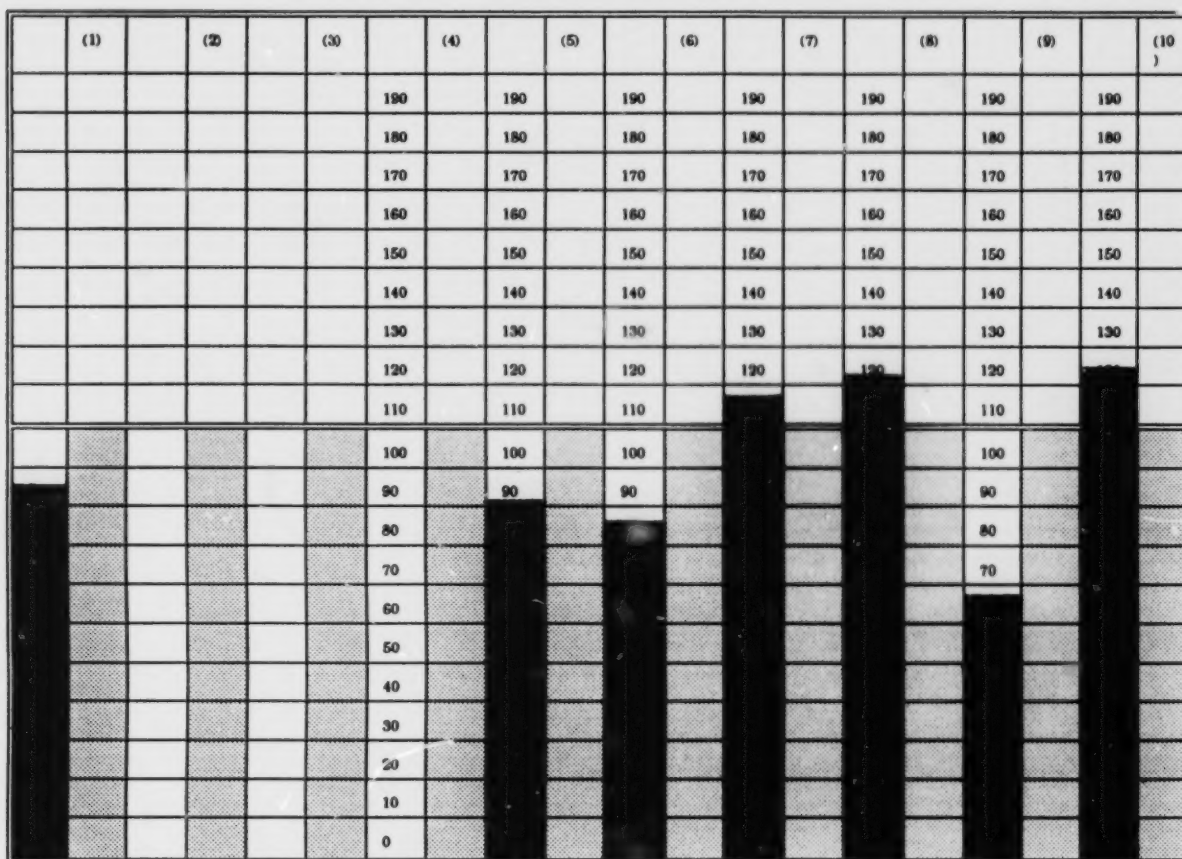
or FIX IT RIGHT

TROUBLESHOOTING THE FARM BUSINESS



The above chart can be used by the instructor and enrollee to determine "the cause" of how the farm business performed. Enrollees will need to use their own FBMA analysis forms, which include comparative data for their type and size of farm business along with data for their business.

PROFILE OF SAMPLE FARM BUSINESS 1992



1) Operator's Net Farm Income

2) Operator's Mgt. Returns

3) Mgt. Returns/Tillable Acre

4) Index of Gross Value Farm Prod./Till. Acre

5) Index of Crop Returns/Tillable Acre

6) Index of Major Crop Yields

7) Index of Percent Land in High Return Crops

8) Index of Prices Received for Major Enterprises

9) Index of Livestock Returns Above Feed/Tillable Acre

10) Index of Non-Feed Costs/Tillable Acre

PROFILE OF _____ FARM BUSINESS _____

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
				190	190	190	190	190	190	190
				180	180	180	180	180	180	180
				170	170	170	170	170	170	170
				160	160	160	160	160	160	160
				150	150	150	150	150	150	150
				140	140	140	140	140	140	140
				130	130	130	130	130	130	130
				120	120	120	120	120	120	120
				110	110	110	110	110	110	110
				100	100	100	100	100	100	100
				90	90	90	90	90	90	90
				80	80	80	80	80	80	80
				70	70	70	70	70	70	70
				60	60	60	60	60	60	60
				50	50	50	50	50	50	50
				40	40	40	40	40	40	40
				30	30	30	30	30	30	30
				20	20	20	20	20	20	20
				10	10	10	10	10	10	10
				0	0	0	0	0	0	0

1) Operator's Net Farm Income

2) Operator's Mgt. Returns

3) Mgt. Returns/Tillable Acre

4) Index of Gross Value Farm Prod./Till. Acre

5) Index of Crop Returns/Tillable Acre

6) Index of Major Crop Yields

7) Index of % Land in High Return Crops

8) Index of Prices Received for
Major Enterprises9) Index of Livestock Returns
Above Feed/Tillable Acre

10) Index of Non-Feed Costs/Tillable Acre

CALCULATING TOTAL RETURNS¹

End-of-Year Inventory or End-of-Month	\$_____	Cash Income & Sales	\$_____
Beginning-of-Year Inventory or Beginning-of-Month	\$_____	Cash Expense & Purch.	\$_____
Inventory Change	\$_____	Net Cash Income	\$_____

Net Cash Income	\$_____
-----------------	---------

Inventory Change	\$_____
------------------	---------

Products Consumed	\$_____
-------------------	---------

TOTAL RETURNS	\$_____
---------------	---------

¹To compute crop returns, add to the returns ASC crop payments, plus value of all feed fed except milk fed. Be sure to add milk sold and fed, ASC wool, and eggs to the dairy, sheep and poultry cash income sales.

(Closing inventory weight + sales weight + consumed weight) minus (beginning inventory weight + purchased weight) = pounds produced.

FIRST THINGS FIRST

1. What are the major strong points of our business?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

2. What are the major weak points in our business that need immediate attention? (List in order of priority.)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

A. What have we done in the past to strengthen or eliminate them?

B. What can we do in the future?

3. What other changes in practices, enterprises, or machinery and equipment utilization did our analysis report indicate should be done? Should not be done?

Should

Should not

4. Were there any unusual circumstances that would make last year's analysis an untrue picture of our farm business?

FARM BUSINESS MANAGEMENT ANALYSIS

Unit II: Analyzing the Farm Business

Lesson 6: Analyzing the Financial Statement and Cash Flow

A. Review

The previous lesson, Analyzing the Profit/Loss Statement, should be reviewed. List all conclusions reached at your last meeting. Possible conclusions may have included:

1. Income should be measured to reflect returns to the most scarce resource.
2. Comparisons with similar businesses can be made, but adjustments for normal yields, etc., should be made.
3. Troubleshooting is a step-by-step procedure for identifying strengths and weaknesses of the business.
4. Plans for improving the farm business to achieve family goals should be revised annually.
5. There are many good tools that may be used to evaluate the farm business. One should use a combination of tools to begin the process of fixing the farm.
- 6.

B. Objective

To understand how the financial statement is set up and how it should be interpreted.

C. Motivation

1. Start by asking the enrollees why having an up-to-date financial statement is necessary. Spend some time discussing this question. Try to include some personal experiences of enrollees in making use of financial statements, including how they have been of help in the past. Point out that the financial statement is the most important indicator of the internal health of the farm business. Lenders, in particular, lean heavily on the financial statement, along with the cash flow, in determining how much additional money a business

might be able to borrow safely. The fact is that most lenders are required to have copies of the current financial statements of all borrowers on file.

2. Administer the quiz on HO-6.1 as a motivational experience for enrollees.

D. Key Points

Key points that will be accomplished are as follows:

1. *What does the cash flow statement tell me?*
2. *How are assets and liabilities classified on the financial statement?*
3. *How is the financial statement set up, and what does it tell me?*
4. *How do I analyze a financial statement with ratios?*
5. *What do lenders look for in a financial statement?*

E. Introduction of Information

Start the introduction of information by telling the enrollees that the FINANCIAL SUMMARY section of the FBMA sample analysis forms is divided into two main sections: the cash flow summary and the financial statement. We will look at the cash flow summary first, discussing how it might be used and where the figures come from, and then study the financial statement. For the figures to be meaningful, we need to understand how the figures are derived and how to make various cross-checks for accuracy.

1. *What does the cash flow statement tell me?*

The cash flow statement shows the breakdown of all actual cash flowing into and out of the farm business and the total business, including family living. All dollars handled by the operator during the year should be accounted for on the cash flow.

- a. Use the FINANCIAL SUMMARY portion of the FBMA sample analysis forms. Discuss the CASH FLOW side of the form, highlighting things the enrollees should look for as they study their own analyses. The CASH FLOW statement is divided into two columns: one for funds received and spent in the farm business, and one for all funds received and spent by the

operator or unit represented. Use the following points and the sample analysis forms to aid in your discussion.

- (1) **SOURCE OF FUNDS**--The figures for each line item under source of funds are explained below.
 - (a) **FUNDS AVAILABLE-BEG. OF PERIOD**--Cash on hand or in checking account.
 - (b) **CROP SALES**--Dollar amount of all crops sold during year.
 - (c) **OTHER FARM RECEIPTS**--Includes such items as: dividends; resales (items purchased and resold -- e.g., fertilizer purchased and resold to a landlord); custom work; cash rent received; etc.
 - (d) **MCHY & BLDG SALES**--Includes receipts from any machinery and buildings sold during the year.
 - (e) **LIVESTOCK & LVSTK PRODUCTS**--Receipts from sale of market livestock and livestock products such as milk and eggs.
 - (f) **LIVESTOCK HELD FOR BREEDING**--Receipts from all breeding livestock sold during the year.
 - (g) **MONEY BORROWED THIS YEAR**--Includes receipts from all money borrowed during the year, whether short-, intermediate-, or long-term. Does not include accumulation of money borrowed before the year began.
 - (h) **NON-FARM INCOME**--Includes all off-farm income (e.g., off-farm wages, stock dividends, income from non-farm business, etc.)
 - (i) **NON-TAXABLE RECEIPTS**--Any non-taxable receipts, including many types of gifts, dividends from some investments, etc.
- (2) **TOTAL SOURCES OF FUNDS**--This total should include every dollar that was taken in during the year from all possible sources.

- (3) **USE OF FUNDS**--The figures for each line item under use of funds are explained below.
- (a) **INTEREST**--Includes all interest paid during the year on all money borrowed.
 - (b) **HIRED LABOR**--Includes all money paid out for hired labor.
 - (c) **HERBICIDES, INSECTICIDES & OTHER CHEMICALS**--Includes all pesticides purchased during the year.
 - (d) **FERTILIZER**--Includes all fertilizer purchased during the year.
 - (e) **SEED**--Includes all seed purchased during the year.
 - (f) **LIVESTOCK SUPPLIES & SERVICES**--Includes all livestock supplies and services purchased during the year.
 - (g) **UTILITIES**--Includes all "Farm Portion" utilities paid for during the year. "Family Living-Expendable" (part of family expenses entered below) should reflect the remaining portion.
 - (h) **INSURANCE**--Includes all "Farm Portion" insurance paid for during the year. "Family Living-Expendable" (part of family expenses entered below) should reflect the remaining portion.
 - (i) **MISCELLANEOUS**--Includes all "Farm Portion" miscellaneous expenses incurred during the year. "Family Living-Expendable" (part of family expenses entered below) should reflect the remaining portion.
 - (j) **TAXES**--Includes property tax paid during the year.
 - (k) **CASH RENT & SETTLEMENTS**--Includes cash rent and settlements paid to landlords during the year.

- (l) **MACHINERY REPAIR**--Includes all machinery repairs paid for during the year except for those largest repairs that may have been depreciated.
- (m) **MACHINE HIRE**--Includes custom work and general machine hire paid for during the year.
- (n) **FUEL & OIL**--Includes all fuel and oil purchased during the year.
- (o) **LIGHT VEHICLE**--Includes expenses on the farm share of automobiles paid during the year. Also includes farm truck expenses.
- (p) **BLDG & FENCE**--Includes all expenses incurred during the year on building and fence repairs that were not depreciated.
- (q) **DRYING & STORAGE**--Includes paid expenses for drying and storage of crops during the year.

CASH OPERATING SUB-TOTAL--This total represents the total of all cash inputs having to do with total farm production. Feed and capital farm purchases, as well as non-farm expenses, follow.

- (r) **FEED PURCHASES**--Includes all feed purchased during the year.
- (s) **LIVESTOCK PURCHASES**--Includes all non-breeding and breeding livestock purchased during the year.
- (t) **MCHY & BLDG PURCHASES**--Includes all machinery and buildings purchased during the year.
- (u) **LAND IMPROVEMENTS & AMORTIZATION**--Includes all land improvements purchased during the year.
- (v) **PRINCIPAL PAYMENTS**--Includes all principal paid on all borrowed funds during the year.
- (w) **CONTRIBUTIONS**--Includes contributions to church, charity, etc. made during the year.

- (x) MEDICAL--Includes all medical expenses paid during the year.
- (y) LIFE, ACCIDENT AND DISABILITY INSURANCE--Includes all payments made on life insurance premiums during the year.
- (z) FAMILY LIVING-EXPENDABLE--Includes all expendable family living expenses such as food, clothing, utilities, entertainment, gifts, etc. paid during the year.
- (aa) FAMILY LIVING-CAPITAL--Includes all capital family living purchases such as vehicles-family portion, furniture, appliances, etc.

FAMILY EXPENSE SUB-TOTAL--This figures includes all family living expenses, expendable and capital.

- (bb) INCOME, SELF-EMPLOYMENT TAX--Includes all state and federal income taxes and social security taxes paid by the operator during the year. This includes any taxes that were deducted from paychecks by employers because those taxes were included in non-farm income above.
- (cc) INVESTMENTS--Includes both farm and non-farm investments such as land, stocks and bonds, real estate, antiques, etc.
- (dd) NON-FARM BUSINESS EXPENSES--Includes any non-farm business expenses incurred during the year.
- (ee) FUNDS AVAILABLE-END OF PERIOD--Includes any money in hand or in checking at the end of the year.
- (4) TOTAL USES OF FUNDS--This total represents all dollars that have been paid out by the operator or unit during the year. Total uses of funds in the "All Funds" column should be equal to the total sources of funds in the "All Funds" column above if all figures were included properly.

- b. Make a check of the CASH FLOW. One of the first things an enrollee should do when going over the analysis is to check the

cash flow statement to see that all figures have been included. Use the following hints in checking the cash flow.

- (1) Check to see that total uses of all funds are equal to total sources of all funds (in the example cash flow, $\$241,365 = \$241,365$). If the two figures are not equal, something has been left out. The most common error is not getting non-farm expenses listed, but it will pay to track down the omission to make sure that it was not a tax deductible farm expense or a taxable receipt.
- (2) Check all of the figures against your records to see that they are all included and in the correct spot.

c. **PROFIT AND LOSS SUMMARY**--A short profit and loss summary has been included at the bottom of the form. It is to use for quick reference instead of having to turn back to the profit and loss statement. Discuss the profit and loss summary, pointing out how each of the figures is derived. Use the following points to aid in your discussion.

- (1) **NET FARM INCOME** = Gross Farm Returns - Total Cash Operating Expense + or - Change in Accounts Receivable, Payable and Prepaid, - Depreciation.
- (2) **NET NON-FARM INCOME** = Gross Non-Farm Receipts.
- (3) **LESS: FAM EXP SUB-TOTAL** = Family Living Expense + Dollar Value of Farm Products Consumed.
- (4) **BALANCE** should approximate change in Net Worth.

NET FARM INCOME + NET NON-FARM INCOME - FAM EXP SUB-TOTAL - INCOME, SELF EMPLOYMENT TAX = BALANCE.

- (5) **MEMO: FARM CASH BALANCE** = Total Sources of Funds, Farm Portion - Total Uses of Funds, Farm Portion ($\$176,469 - \$140,987 = \$35,482$). This means that \$35,482 more cash dollars were taken in than were spent on farm items.
- (6) **MEMO: CASH BASIS 1040F NET FARM PROFIT**--This figure represents the farm profit as calculated on Form 1040F and is the basis for figuring income tax.

(7) **MEMO: SCHEDULE 1040F DEPRECIATION**--This figure represents the depreciation on machinery and equipment, buildings and land improvements, and livestock for the year that will be deducted on Form 1040F along with the other regular farm expenses.

d. Discuss any problems the enrollees may have in understanding the cash flow as presented here. Remind them that the cash flow is simply a statement of where cash came from and where it went.

2. *How are assets and liabilities classified on the financial statement?*

a. Give enrollees HO-6.3, Classification of Assets and Liabilities, as a motivator for this section. Let them work through the worksheet. Then show TM-6.1 and TM-6.2 as you discuss the classification of assets and liabilities on the financial statement. Use the points below to aid in your discussion.

(1) Classification of Assets--

(a) **CURRENT ASSETS**--Current assets consist of cash or other assets that can be converted to cash through the normal operations of the business through the year. This includes things like market livestock, stored crops and feed, hedging account balances, etc.

(b) **INTERMEDIATE ASSETS**--Intermediate assets consist of those resources or production items whose useful life is between one and ten years. Intermediate assets are generally depreciable and consist of items such as machinery and equipment, and breeding livestock.

(c) **FIXED (or long-term) ASSETS**--Fixed assets are also called long-term assets and are permanent in nature. They consist primarily of land, buildings, and improvements.

(2) Classification of Liabilities--

(a) **CURRENT LIABILITIES**--Current liabilities are those debts due within the operating year. These include short-term notes, accounts payable, accrued interest, and principal on intermediate and long-term notes due within the next 12 months.

- (b) **INTERMEDIATE LIABILITIES**--Intermediate loans are normally for a period of at least 12 months but less than 8-10 years. Examples include notes for machinery and equipment, breeding livestock, etc.
- (c) **LONG-TERM LIABILITIES**--Long-term liabilities consist of mortgages and land contracts on real estate, less the principal balance, due within the next 12 months.

3. *How is the financial statement set up, and what does it tell me?*

The financial statement is completed in two ways: on a modified cost basis and on a fair market value basis. We will first compare the two methods, then look at where the figures come from and at how to make checks for accuracy.

- a. Turn the enrollees' attention to the **FINANCIAL SUMMARY** portion of the FBMA sample analysis forms. Discuss modified cost basis as compared to fair market value using the following points in your discussion.
 - (1) **MODIFIED COST BASIS**--For the modified cost basis statement, depreciable items are valued at their record book or depreciated value. This includes most intermediate assets and some long-term assets. Items such as real estate and personal residence may be valued at either book or real value. In the example, book value was used for land in the modified cost basis. The values of current assets should always be the same under modified cost or fair market value because of their short-term nature. In short, the modified cost values should always agree with the depreciated values of items on the depreciation schedule. Breeding livestock for accounting purposes are entered at fair market value. In most cases, breeding livestock will be entered the same as ending inventory value.
 - (2) **FAIR MARKET VALUE**--For the fair market value statement, items are valued at their current or true value regardless of book value. Current assets will be the same as for modified cost basis, but intermediate and long-term assets should generally be different. Note the differences on the sample schedule.

The modified cost basis statement is important as far as record keeping is concerned. It is needed to check accounting procedures, etc. However, the fair market value statement is probably most useful to farmers because it gives an up-to-date or more true picture of the business. Because the operator sets the values to be used on the fair market value statement, it is critical that good judgment is used. Otherwise a lender might put little faith in the statement, and it would have limited value.

- b. Discuss with the enrollees each line item on the financial statement and where the figure comes from. Use the following points to aid in your discussion.

(1) CURRENT ASSETS

- (a) CASH ON HAND OR IN CHECKING--Includes any loose cash available and cash in checking accounts.
- (b) CASH IN SAVINGS & TIME CD'S--Includes any cash in savings, passbook accounts, etc., that can be recovered at any time.
- (c) HEDGING ACCOUNT BALANCE--Includes balance in all hedging accounts at the end of the year.
- (d) MARKETABLE STOCKS & BONDS--Includes stocks and bonds that can be converted to cash at any time.
- (e) ACCOUNTS RECEIVABLE--Short-term notes and accounts receivable. You can reasonably expect to collect on demand.
- (f) CROPS & FEED--Includes all stored crops and feed on hand.
- (g) MARKET LIVESTOCK--Includes all market livestock.

- (h) **PREPAID EXPENSES**--Includes all prepaid expenses at the beginning and end of the year. An example might be investment in growing wheat. You have probably paid for the seed and fertilizer before the year is over, so they would be considered prepaid expenses.
- (i) **NON-FARM BUSINESS, OTHER**--Any other non-farm assets that can be quickly converted to cash.

(2) **INTERMEDIATE ASSETS**

- (a) **NOTES RECEIVABLE**--Includes notes and accounts receivable that are due in 1-10 years. An example might be a loan made to a child or other relative.
- (b) **MACHINERY, EQUIPMENT, & LIGHT VEHICLE**--Includes book value of machinery under modified cost and real or current value under fair market value.
- (c) **BREEDING LIVESTOCK**--Both book value and fair market value are figured at current ending inventory value.
- (d) **CASH VALUE OF LIFE INSURANCE**--Includes cash value of any life insurance owned--not face value.
- (e) **SECURITIES NOT READILY MARKETABLE**--Includes any securities owned that cannot be converted to cash at will, but that are tied up in some way. An example might be FCS stock.
- (f) **HOME FURN., PERS. ITEMS**--Includes value of all items like furniture, appliances, and personal items of value; e.g., guns, sporting equipment, etc.
- (g) **NON-FARM BUSINESS, OTHER**--Includes any other intermediate non-farm assets.
- (h) **RETIREMENT ACCOUNTS-KEOGH & IRA**--Includes any retirement accounts or IRA accounts considered as an intermediate asset.

(3) **FIXED ASSETS**

- (a) **FARM REAL ESTATE-BARE LAND**--Includes the value of all bare land owned. Does not include buildings or any other depreciable items.
- (b) **BUILDINGS & IMPROVEMENTS**--Includes the book value of buildings and improvements under modified cost and the real or current value under fair market value.
- (c) **PERSONAL RESIDENCE**--Includes the value of the operator's dwelling.
- (d) **OTHER NON-FARM REAL ESTATE**--Includes the value of any non-farm real estate; e.g., a cabin at the lake, a non-farm business, etc.
- (e) **CONTRACTS & NOTES RECEIVABLE**--Includes any long-term contracts and notes receivable. An example might be a farm that you sold to another individual, and that you loaned the money on for 20 years.
- (f) **NON-FARM BUSINESS, OTHER, AMORTIZATION**--Includes any other fixed or long-term assets.

(4) **CURRENT LIABILITIES**

- (a) **OPERATING, SHORT-TERM NOTES, < 1 YR.**--Includes any short-term notes due within the year.
- (b) **ACCOUNTS PAYABLE W/MERCH. & DEALERS**--Includes any accounts payable such as feed bills, machinery repair bills, etc.
- (c) **ACCRUED TAXES-INCOME, S.S., R.E.**--Includes any accrued taxes on income, social security, property, etc. An example might be that as a farmer, at the end of the year, you may know that you will owe at least \$3,500 in income and social security tax. These would be considered accrued taxes.

- (d) ACCRUED INTEREST--This includes interest that has accrued on loans that have not yet been paid.
 - (e) PRINCIPAL DUE WITHIN 12 MONTHS:
INTERMEDIATE-TERM NOTES--
LONG-TERM NOTES--
Includes all principal that will be due within the year on intermediate and long-term loans.
 - (f) OTHER & CCC LOANS--Includes any other current liabilities and Commodity Credit Corporation notes.
- (5) INTERMEDIATE LIABILITIES
- (a) DEFERRED PORTION INTERMED. NOTES--
Includes the full amount of intermediate notes that will be due in future years.
 - (b) LIFE INSURANCE POLICY LOANS--Includes amount of any loans made on the basis of life insurance policies.
 - (c) OTHER--Includes any other intermediate liabilities.
- (6) LONG-TERM LIABILITIES
- (a) DEFERRED PORTION R.E. MORTGAGES--
Includes the full amount of real estate loans that will be due in future years.
 - (b) DEFERRED PORTION LAND CONTRACTS--
Includes the full amount of land contracts that will be due in future years.
 - (c) OTHER--Includes any other long-term liabilities.
- (7) CONTINGENT TAX LIABILITY--The contingent tax liability is an estimate of the amount of tax that would be owed if the business were liquidated.
- (8) NET WORTH--The net worth is found by subtracting total liabilities from total assets.

- (9) **CHANGE IN NET WORTH**--The change in net worth is a comparison of net worth at the beginning of the year and the end of the year. It is calculated by subtracting the net worth at the beginning of the year from the net worth at the end of the year.
- (10) **TOTAL LIAB / TOTAL ASSETS** (from FBMA analysis forms)--(Debt:Asset ratio) is total liabilities divided by total assets (a desirable ratio would be .5 or less).
- (11) **CURRENT ASSETS / CURRENT LIAB** (from FBMA analysis forms)--(Liquidity) is total current assets divided by total current liabilities (a desirable ratio would be 2 or greater).
- (12) **DEBT / WORTH** (from FBMA analysis forms)--(Debt:Equity ratio or Leverage) is total current liabilities + total intermediate liabilities + total long-term liabilities divided by total assets (a desirable ratio would be .5 or less).

c. Discuss with the enrollees the things that should be checked when evaluating their financial statements. Using the sample analysis forms, demonstrate the following points in checking the financial statement.

- (1) **MONEY BORROWED THIS YEAR - PRINCIPAL PAID THIS YEAR** = change in total liabilities for the year-- (\$30,500 borrowed this year - \$38,399 principal paid this year = (\$7,899) less borrowed at the end of the year than at the beginning. \$229,483 total liabilities at the end of the year - \$233,652 total liabilities at the beginning of the year = (\$4,169) less liabilities at the end than at the beginning. Using the following formula, the \$130 difference appears (this clarifies the change noted in accrual taxes).

Beg.Ln.Bal. +	Money Borr. =	End.Ln.Bal. +	Prin.Pay.
\$233,652 +	\$30,500 (farm) =	\$229,483 +	\$38,399 (farm)
	\$ 4,900 (non-farm)		\$ 1,200 (non-farm)

- (2) **CHANGE IN NET WORTH** = NET FARM INCOME + NON-FARM WAGES + OTHER NET NON-FARM INCOME - FAMILY LIVING, INCOME AND SOCIAL SECURITY TAX (from FBMA analysis forms)--(\$31,369

Net Farm Income + \$27,396 Net Non-Farm Income - \$17,110 Family Living & Value - \$130 Income and Social Security Tax = \$41,525 Change in Net Worth. The \$41,525 is off \$150. This will occur when there is an increase in the value of Non-Farm Assets and lack of a non-farm investment expense. In this case, the expense was a part of family living.

- (3) New investments shown on the cash flow side must be reflected on the financial statement. In the example, we see investments of \$1,470 (Livestock Purchases) and \$17,000 (Mchy. & Bldg. Purchases) were made. (Be sure to allow for depreciation and added raised breeding livestock when checking the validity of these entries.)
- (4) Check for any other inequities between the cash flow for the year and changes in assets and liabilities for the year.

4. *How do I analyze a financial statement with ratios?*

Give enrollees HO-6.5, Financial Ratio Analysis. Read through the handout with them and discuss each ratio. As you read and discuss the ratios, figure each one on the financial statement portion of the sample analysis forms and discuss the implications. Following are the ratios from the FBMA sample analysis forms and points to help in discussing them. We will use the fair market value statement to figure ratios because it is the truest picture of the business.

- a. Current Ratio = Current Assets ÷ Current Liabilities (\$84,203 ÷ \$35,515 = 2.37:1)--This current ratio is reflecting too much short-term money borrowed in relation to current assets and, if possible, the farmer may want to shift some of this current debt to intermediate debt.
- b. Intermediate Ratio = Intermediate Assets ÷ Intermediate Liabilities (\$47,975 ÷ \$16,847 = 2.85:1)--This intermediate ratio is an acceptable one, as it is close to the recommended 3:1 level. However, in order to be able to shift some current debt to intermediate debt, some intermediate debt needs to be shifted to long-term debt, if possible.
- c. Net Capital Ratio = Total Assets ÷ Total Liabilities (\$714,978 ÷ \$229,483 = 3.12:1)--This net capital ratio reflects a safe business at this point. It appears that debt could be shifted to long-term debt without any problems; in fact, this farmer

should consider looking toward an additional long-term investment.

- d. Debt:Net Worth Ratio = Total Liabilities ÷ Net Worth
(\$229,483 ÷ \$485,495 = .47:1)--This ratio suggests that this business is not very highly leveraged and might profit from using additional borrowed money to expand the business.
- e. These are the basic ratios from the FBMA sample analysis forms. You may want to discuss other ratios and financial measures. Two good sources of information are the American Bankers Association Farm Financial Standards Task Force basic set of financial measures or The Ferguson AgReport measurements.

5. *What do lenders look for in a financial statement?*

Discuss the four points on TM-6.3 as you study this key point. Below are some notes to use in your discussion.

- a. **FINANCIAL POSITION**--By looking at your net worth, the lender gets a quick handle on your financial position. The net worth is probably the most important figure on the financial statement.
- b. **PROGRESS**--The lender can measure the progress of the borrower by observing the change in net worth each year. The lender would probably not be particularly concerned if net worth did not increase in a particular year; however, a profitable business generally shows growth in net worth over time.
- c. **SIZE & TYPE OF BUSINESS**--The lender gets a picture of the size and type of business by seeing total assets and liabilities and observing where most of the assets are located. In other words, are the assets fixed or inactive, or are they working assets (machinery, livestock, etc.).
- d. **RATIOS**--The lender will definitely look at the financial ratios and help a borrower stay in a safe position. The lender will also use the ratios in helping the borrower keep current, intermediate, and long-term debt in correct relationship with each other.

F. Discussion

Sufficient time should be allotted for enrollees to discuss and ask any questions about the financial statement and cash flow.

G. Conclusions

Conclusions that may be reached include:

1. The financial statement is like a "snapshot" of the total farm business.
2. The cash flow statement reflects all dollars coming into and leaving the total business.
3. The total amount of money coming in should be equal to the total amount of money going out.
4. Financial ratios are a help to lenders in analyzing the farm business and servicing their borrowers.
- 5.

Announcements

Next meeting, we will be working on analyzing livestock enterprises.

Social

Individual Instruction

When meeting with enrollees following this lesson, sit down with them and help them analyze their financial statements. Work through the financial ratios with them and discuss the implications and what they may want to do differently. Also, check over the cash flow and make checks. If there are any problems, discuss how they might be corrected in the future.

Materials Needed

Instructor

- | | |
|----------------------------|--|
| TM-6.1 | Classification of Assets |
| TM-6.2 | Classification of Liabilities |
| TM-6.3 | What Does a Lender See in a Financial Statement? |
| FBMA sample analysis forms | |

Student

HO-6.1 Quiz--Financial Statements
HO-6.2 Key for Quiz (HO-6.1)
HO-6.3 Worksheet--Classification of Assets and Liabilities
HO-6.4 Key for Worksheet (HO-6.3)
HO-6.5 Financial Ratio Analysis
Missouri Farm Business Record Book
FBMA sample analysis forms

CLASSIFICATION OF ASSETS

CURRENT --

Cash or other assets that can be converted to cash through the normal operation of the business throughout the year.

INTERMEDIATE --

Resources or production items whose useful life is between one and ten years.

FIXED OR LONG-TERM --

Assets that are permanent in nature.

CLASSIFICATION
OF
LIABILITIES

CURRENT --

Debts due within the operating year.

INTERMEDIATE --

Debts due from one to ten years.

LONG-TERM --

Mortgages and land contracts set up for more than ten years.

WHAT DOES
A LENDER SEE IN
A FINANCIAL STATEMENT?

FINANCIAL POSITION

PROGRESS

SIZE & TYPE OF BUSINESS

RATIOS

QUIZ -- FINANCIAL STATEMENTS

- ___ 1. A net capital (total assets ÷ total liabilities) ratio of ___ is considered the minimum by most lenders.
- a. 3:1
 - b. 2:1
 - c. 1:1
 - d. 4:1
- ___ 2. This ratio means that, other things being all right, if you had total assets of \$150,000, you could have \$___ borrowed and still be sound financially.
- ___ 3. A narrow net capital ratio will often cause high interest payments in relation to total income. True or False
- ___ 4. A current ratio (current assets ÷ current liabilities) of 1:1 is acceptable. True or False
- ___ 5. A farmer is considered solvent if:
- a. there are sufficient current assets to cover current debts.
 - b. there is sufficient equity to cover current debts.
 - c. there are sufficient assets to cover all debts.
 - d. all debts can be paid with all equity.
- ___ 6. Which of the following is not the purpose of preparing a financial statement:
- a. to show the relative amounts of debt and equity.
 - b. to use in computing financial ratios.
 - c. to provide for computation of profit or loss of the business this year.
 - d. to measure your progress this year versus last year and previous years.

KEY FOR QUIZ (HO-6.1)

1. b
2. \$75,000
3. True
4. False
5. c
6. c

WORKSHEET -- CLASSIFICATION OF ASSETS AND LIABILITIES

Match the assets and liabilities on the left with the appropriate classification on the right. (Letters may be used more than once.)

- | | |
|--|--------------------------------|
| 1. ___ 392 acres of land | A. Current Assets |
| 2. ___ farrowing house | B. Intermediate Assets |
| 3. ___ 6-month note | C. Fixed Assets |
| 4. ___ 129 fat hogs | D. Current Liabilities |
| 5. ___ \$692 feed bill | E. Intermediate Liabilities |
| 6. ___ combine | F. Long-Term Liabilities |
| 7. ___ 5-year note on combine | |
| 8. ___ 20 shares of common stock | |
| 9. ___ \$600 in passbook savings | |
| 10. ___ 32 beef cows | |
| 11. ___ 30-year loan on farm | |
| 12. ___ \$290 in checking account | |
| 13. ___ \$6,500 due this year on farm loan | |
| 14. ___ accrued income tax not paid | |
| 15. ___ refrigerator | |
| 16. ___ 3,200 bushels of stored beans | |
| 17. ___ \$1,500 excess in hedging account | |

KEY FOR WORKSHEET (HO-6.3)

	<u>List Key</u>	<u>Letter Key</u>
Assets		
Current Assets		
129 fat hogs	1.	C
20 shares of common stock	2.	C
\$600 in passbook savings	3.	D
\$290 in checking account	4.	A
3,200 bushels of stored beans	5.	D
\$1,500 excess in hedging account	6.	B
	7.	E
	8.	A
	9.	A
	10.	B
	11.	F
Intermediate Assets	12.	A
combine	13.	D
32 beef cows	14.	D
refrigerator	15.	B
	16.	A
	17.	A
Fixed Assets		
392 acres of land		
farrowing house		
Liabilities		
Current Liabilities		
6-month note		
\$692 feed bill		
\$6,500 due this year on farm loan		
accrued income tax not paid		
Intermediate Liabilities		
5-year note on combine		
Long-Term Liabilities		
30-year loan on farm		

FINANCIAL RATIO ANALYSIS

Current ratio--current assets divided by current liabilities. This is a measure of "liquidity" and indicates whether or not a business can pay its current debts. If the ratio is less than 1 to 1 (current liabilities exceed current assets), working or fixed assets may have to be sold to pay current debts. A ratio between 1 to 1 and 2 to 1 may mean working capital and family living cash will be seriously limited. A ratio of 3 to 1 indicates good current strength. A ratio higher than this indicates that the business is not expanding to its potential rate.

Poor current ratios are often the result of too much short-term financing. Thus, the solution may be to shift some current liabilities to long-term liabilities, as an example.

Intermediate ratio--intermediate assets divided by intermediate liabilities. This is often called the "working ratio" because it involves assets such as cows, tractors, etc. that are working for us. This ratio should also be close to 3 to 1.

Net capital ratio--total assets divided by total liabilities. This is a measure of "solvency." Most lenders prefer this ratio to be 2:1 or better as a general rule. It means the farmer has one dollar invested for each dollar the lender has loaned in the business. Some exceptions to the previous statement are: (1) a younger person can stand narrower ratios; (2) a person with outside fixed income can stand narrow ratios; and (3) a "small" debt can be safer on a narrow ratio.

Some reasons this ratio is so important to a lender are: (1) if it is too narrow, problems come up because of higher interest cost in relation to percent return on investment; and (2) debt servicing can become a problem, etc. How can an unsatisfactory ratio be corrected? Quite often it involves selling some assets and paying part of the debts. Deciding which assets to sell requires much planning in order to maintain the correct profit picture. Often, this can be done to increase net profit, as well as to correct unsatisfactory ratios.

Debt:equity ratio--total liabilities ÷ net worth. This is often called a measure of "leverage." It is a measure of the dollars invested by a business compared to those borrowed. "Leverage" means to use someone else's money to make money. As an example, if a 12 percent return can be earned on total farm capital and interest cost of borrowed capital is 8 percent, then leverage is working to the advantage of the farmer. However, it should be recognized that increasing amounts of leverage increases the amount of risk in case the return on total farm capital drops below interest cost, as might happen in event of drought, lower market prices, higher death loss than expected, etc. A ratio of 1:1 here would be the same as a "Net Capital Ratio" of 2:1. Lenders generally prefer a 1:1 debt:net worth ratio or less.

FARM BUSINESS MANAGEMENT ANALYSIS

Unit II: Analyzing the Farm Business

Lesson 7: Analyzing Livestock Enterprises

A. Review

The previous lesson, Analyzing the Financial Statement and Cash Flow, should be reviewed. List all conclusions reached at your last meeting. Possible conclusions may have included:

1. The financial statement is like a "snapshot" of the total farm business.
2. The cash flow statement reflects all dollars coming into and leaving the total business.
3. The total amount of money coming in should be equal to the total amount of money going out.
4. Financial ratios are a help to lenders in analyzing the farm business and servicing their borrowers.
- 5.

B. Objective

To be able to analyze the livestock enterprise by evaluating efficiency factors.

C. Motivation

Ask the enrollees which efficiency factors and/or costs in livestock enterprises are most closely related. Take one enterprise in particular, e.g., swine, and write down the enrollees' comments on the board. Discuss the answers one at a time and come to some type of agreement. Some enrollees may respond that pounds of feed per pound of gain is the best indicator of profit, while others may think number of pigs weaned is more important. The important thing here is to try to get the group thinking in terms of what factors they need to begin improving upon in order to make their livestock enterprises more profitable.

D. Key Points

Key points that will be accomplished are as follows:

1. *What are the profitability factors that are common to all livestock enterprises?*
2. *How should I analyze each of my livestock enterprises?*
3. *What can I do to make my livestock enterprises more profitable?*

E. Introduction of Information

Start the introduction of information by telling the enrollees that the downfall of many farmers has been that they have concentrated too much on one factor of livestock production and have lost sight of the total picture. Another problem has been that farmers have often continued to produce when an enterprise has been consistently losing money. Point out that it is not advisable or even possible to make definitive judgments based on only one year's analysis; instead, decisions should be made on the basis of several years of analysis.

1. *What are the profitability factors that are common to all livestock enterprises?*

Refer to the LIVESTOCK ANALYSIS portion of the FBMA sample analysis forms or have the enrollees refer to their own LIVESTOCK ANALYSIS forms from their previous analyses. While showing TM-7.1, discuss the profitability factors that are common to all livestock enterprises. Show how each is calculated so that enrollees understand where the factors come from and what they mean for each enterprise. It is likely that, for your group, some enterprises will be more common than others, and more time should be spent on those enterprises.

- a. Below is a short discussion of each of the Livestock Profitability Factors listed on TM-7.1.
 - (1) Total pounds produced = (lbs. on closing inventory + lbs. sold + death loss) - (lbs. on beginning inventory + lbs. purchased). This factor mainly gives an indication of the size and scope of the enterprise.
 - (2) Total returns = (cash income + capital sales + end of the year inventory + value of products consumed) - (cash

expenses + capital purchases + beginning of the year inventory).

- (3) Value of feed fed = value of raised feed fed + value of purchased feed fed.
 - (4) Returns per \$100 feed fed = total returns ÷ value of feed fed x 100. Because feed cost is a major cost in all livestock enterprises, this figure is a particularly important one to evaluate and compare with others.
 - (5) Returns above feed/cow or litter = (total returns - value of feed fed) ÷ cwt. This is a good factor to use in comparing with other operations.
 - (6) Death loss:percent of lbs. produced = pounds of death loss ÷ total pounds produced.
 - (7) Feed cost/100 lbs. produced = value of feed fed ÷ total lbs. produced x 100.
 - (8) Price received for 100 lbs. sold = total receipts ÷ total lbs. sold x 100.
 - (9) Total returns per 100 lbs. produced = total returns ÷ total pounds produced x 100. Major differences between price received and total returns per 100 lbs. may indicate poor inventory accounting or high death loss.
 - (10) Pounds of feed per unit produced = (lbs. of grain + lbs. of protein and minerals + lbs. of hay or silage + amount of any other feeds fed) ÷ units (lbs. or cwt. produced).
- b. Point out to the enrollees that even though all of the factors previously discussed are common to all livestock enterprises, each enterprise is different and has its own individual characteristics. Types of feed fed and products sold, for example, vary with each enterprise. Discuss some of the differences in the various enterprises on the LIVESTOCK ANALYSIS portion of the FBMA sample analysis forms.
- c. Remind the enrollees that there are a specific number of operators in the summary, and the higher the number, the greater the validity. These figures in the summary could be influenced by each operator's pricing inputs.

For example: CORN

\$ values / unit on inventories \$2.10 inventory price

\$ values / unit on feed \$2.30 cost as fed

If the state averages were used, everyone would be compared on the same basis. If you as an individual place more conservative values, or plug break-even costs or market value costs for feed value, and these are greatly different than the average, it may influence your comparison to the averages.

2. *How should I analyze each of my livestock enterprises?*

Each enterprise should be analyzed by first comparing "MY FARM" with the average, high return, and low return farms shown on the LIVESTOCK ANALYSIS portion of the FBMA sample analysis forms. Then, each enrollee should do a complete profit analysis on each livestock enterprise owned. Following are hints for completing these two activities.

- a. Show TM-7.2 to enrollees to stimulate some thought. Visit with the enrollees about how to make comparisons with other farms shown on the LIVESTOCK ANALYSIS forms. The main point that needs to be made is that the comparison must be made as a whole, not just by picking out one point that is good or bad and making judgments based on the one factor. Also, what may be good for one producer is possibly bad for another. One example might be death loss in a feeder cattle enterprise. One producer's death loss may be considerably higher than another's, but if that producer has been paying a lower purchase price, it may be because feeders were purchased at a lower price per live pound. At this point, was the lower purchase price enough to offset the higher death loss? If yes, obviously this is a good management strategy for this farmer. Another common example might be in feed cost. One producer's cost of feed per 100 lbs. may be higher than another's, but if efficiency gain is also better, the cost of gain could in fact be better for the producer with the higher cost of feed.

The main questions the producer should be asking while making comparisons are as TM-7.2 suggests: How does my farm compare? and Why is my farm different? Do these differences reflect improved profit; e.g., does lower feed cost give lower cost of gain? What can I or should I do about lower

results? As an example, a beef cow enterprise may show a loss. However, it is important to ask what effect the elimination of this enterprise would have on total farm profit. It may lower profit if there is no alternative market for some of the costs charged to the beef cow enterprise. A final question could be: What are the high return farms doing differently? Is their cost structure different because of economy of scale, or are their enterprises greatly different in certain areas such as cost of gain and feed efficiency? Often this is the case, rather than the market prices received.

- b. Discuss HO-7.1, HO-7.2 and HO-7.3, using the LIVESTOCK ANALYSIS portion of the FBMA sample analysis forms, or use the enrollees' own enterprise analyses. HO-7.3 is a key for HO-7.1 (after it has been completed with information from HO-7.2) and can be used to project next year's budget because this form is more like a typical budget than the other analysis forms. Enter the information regarding Sows/Raising Market Hogs from HO-7.2 on HO-7.1 together, and then let enrollees make the Beef Cow/Raising Feeder Cattle entries on their own. When they have finished, go over the entries with them. In discussing the outcome of these entries, point out that even though the beef enterprise lost money, it is probably wise for the producer to continue with the cow herd because of the large value of otherwise non-marketable feeds that were charged to the herd. After you have completed these, if time permits, you might enter and discuss some other examples that the enrollees are interested in. If possible, use figures they can generate from their own LIVESTOCK ANALYSIS forms for their home farms.

3. *What can I do to make my livestock enterprises more profitable?*

This is the difficult task in any situation: How do I get better? At this point in the lesson, it is time for enrollees to begin thinking about things they can do to improve their livestock programs. So often people make decisions based solely on the past. Try to get the enrollees to look ahead. What goals have they set for their livestock programs? Do they want to expand in certain areas and phase out others? What kind of investments are they willing to make? Are their enterprises as profitable as they need to be to support their living expenses? Are they overlooking opportunities in enterprises that they are afraid may have adverse price movements, and could they hedge to alleviate fears?

Remind the enrollee to look at their enterprises' profitability over time. This may be difficult if this is only the first or second complete analysis for their farm. The effect of diversification of crop and livestock enterprises may be beneficial over time. Livestock may add substantially to gross value of farm production/TA, and feeding crops to livestock may be the best method to market crops, especially when considering costs of price, dock, shipping, etc. As the figures below show, crop and livestock enterprise returns have complemented each other over the last four years. When one was down, the other picked up some of the difference.

	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>
Crop return/TA	\$173.88	\$164.15	\$152.03	\$180.66
Lvstk. return feed/TA	\$ 44.87	\$ 76.51	\$ 48.99	\$ 50.02

Even the top 1/3 of crop farms had substantial livestock returns/TA when compared to the bottom 1/3 in 1992 (\$19.50 versus \$9.32).

- a. Give enrollees a copy of HO-7.4 and refer to the livestock averages on the FBMA sample analysis forms. Give them time to complete each checklist or, if you are short of time, tell them to complete the checklists at home. The main purpose of these checklists is to encourage the enrollees to consider each factor in their livestock analysis.
- b. Show TM-7.3 to summarize this key point. Encourage discussion from enrollees on these four points.

F. Discussion

Sufficient time should be allotted for enrollees to ask questions and discuss ideas they may have for improving their livestock enterprises. Review the lesson, and make sure enrollees understand how to interpret the LIVESTOCK ANALYSIS portion of the FBMA sample analysis forms. Distribute blank copies of HO-7.1 for home use.

G. Conclusions

Conclusions that may be reached include:

1. A number of important profitability factors are common to all livestock enterprises.
2. Each livestock enterprise must be analyzed separately.

3. A weakness in one factor does not mean anything in itself but must be considered in relationship with all other factors.
4. Improvement is difficult until you have a good understanding of the present situation and of how you compare with others.
- 5.

Announcements

Next meeting, we will be working on analyzing crop enterprises.

Social

Individual Instruction

When meeting with enrollees following this lesson, help them evaluate their livestock enterprises. Sit down with them and go over the LIVESTOCK ANALYSIS portion of their FBMA sample analysis forms and the checklists that they were to complete individually. This would be an excellent opportunity to run some computer budgets such as those on the AgEbb Electronic Bulletin Board (Voice help 314/882-4827, Access 314/882-8289). Running a least cost ratio may be a big help in reducing feed cost. There are also analysis programs that are excellent for evaluating a whole herd or flock. It might also be a good time to tour the livestock facilities on the farm and make any suggestions that might be helpful.

Materials Needed

Instructor

TM-7.1	Common Livestock Profitability Factors
TM-7.2	How Does My Farm Compare?
TM-7.3	Making Livestock Enterprises More Profitable
Computer and modem (for individual instruction)	
FBMA sample analysis forms	

Student

HO-7.1	Livestock Enterprise Analysis (two per enrollee)
HO-7.2	Sample Livestock Enterprise Analysis Entries
HO-7.3	Sample Livestock Enterprise Analysis Key
HO-7.4	Livestock Enterprise Checklists
FBMA sample analysis forms	

COMMON LIVESTOCK
PROFITABILITY FACTORS

TOTAL POUNDS PRODUCED

TOTAL RETURNS

VALUE OF FEED FED

RETURNS PER \$100 FEED FED

RETURNS ABOVE FEED/COW OR LITTER

DEATH LOSS:PERCENT OF LBS.
PRODUCED

FEED COST/100 LBS. PRODUCED

PRICE RECEIVED FOR 100 LBS. SOLD

TOTAL RETURN PER 100 LBS. PRODUCED

POUNDS OF FEED PER UNIT PRODUCED

HOW DOES MY FARM COMPARE?

↑ HIGH FARMS

↓ LOW FARMS

←→ AVERAGE FARMS



WHY IS MY FARM DIFFERENT?

WHAT ARE THE HIGH RETURN FARMS DOING DIFFERENTLY?

MAKING
LIVESTOCK ENTERPRISES
MORE PROFITABLE

If it's working, DO MORE OF IT!

If it's losing, STOP IT!

If cost can be cut without hurting efficiency, DO IT!

If an alternative investment will pay off, CONSIDER IT!

LIVESTOCK ENTERPRISE ANALYSIS 19__

Item	Enterprise _____ Units _____	Enterprise _____ Units _____
1. RETURN ABOVE FEED COST AND PURCHASED LIVESTOCK		
2. VALUE OF NON-MARKETABLE FEEDS FED		
Value of pasture charged		
Value of hay and hay silages		
Total		
3. RETURN ABOVE COST OF MARKETABLE FEEDS FED ONLY (Item 1 + Item 2)		
4. OTHER VARIABLE DIRECT CASH COSTS*		
Veterinary, medical		
Other cash livestock expenses		
Electricity, power, fuel, and equipment repair		
Total		
5. RETURN ABOVE MARKETABLE FEED AND OTHER VARIABLE DIRECT CASH COSTS (Item 3 - Item 4)		
6. OTHER POSSIBLE COSTS*		
Value of non-marketable feeds fed (Item 2 above)		
Depreciation, repairs, interest, and taxes on buildings		
Interest on investment in livestock, feed, and equipment		
Labor		
General farm overhead expenses		
Total		
7. RETURN ABOVE ALL COST (Item 5 - Item 6)		
*Use your actual costs or estimates furnished from Manual 75.		

SAMPLE LIVESTOCK ANALYSIS ENTRIES

1. Sows/Raising Market Hogs

- a. 50 litters produced
- b. total returns = \$34,150
- c. value of concentrates, vitamins and minerals fed = \$22,050
- d. value of pasture, hay, and silage fed = \$0
- e. veterinarian and medicine per litter = \$21
- f. other cash expenses per litter = \$20
- g. electricity, power, fuel, and equipment repair per litter = \$18
- h. average investment in livestock, feed, and equipment per litter = \$240
- i. interest = 12%
- j. depreciation, repairs, interest, and taxes on building per litter = \$29
- k. labor = 18 hours per litter at \$6/hr.
- l. general farm overhead expenses per litter = \$6.50

2. Beef Cows/Raising Feeder Cattle

- a. 50 cows producing 450# calves
- b. total returns = \$11,812 ($70\% \times 50 \times 450 \times .75 = 11,812$)
- c. value of concentrates, vitamins and minerals fed = \$800
- d. value of pasture fed = \$100/cow ($\$10/\text{hd-mo.} \times 10 \text{ mo.}$)
- e. value of hay fed = \$80/cow
- f. veterinarian and medicine = \$10/cow
- g. other cash expenses = \$18/cow
- h. electricity, power, fuel, and equipment repair = \$5/cow
- i. average investment in livestock, feed, and equipment = \$1,000/cow
- j. interest = 12%
- k. depreciation, repairs, interest and taxes on buildings = \$12/cow
- l. labor = 15 hrs. per cow at \$6/hr.
- m. general farm overhead expenses = \$18/cow

SAMPLE LIVESTOCK ENTERPRISE ANALYSIS K E Y

Item	Enterprise <u>swine</u> Units <u>50 litters</u>	Enterprise <u>cows</u> Units <u>50</u>
1. RETURN ABOVE FEED COST AND PURCHASED LIVESTOCK	\$12,100	\$11,012
2. VALUE OF NON-MARKETABLE FEEDS FED		
Value of pasture charged		\$5,000
Value of hay and hay silages		\$4,000
Total		\$9,000
3. RETURN ABOVE COST OF MARKETABLE FEEDS FED ONLY (Item 1 + Item 2)	\$12,100	\$20,012
4. OTHER VARIABLE DIRECT CASH COSTS*		
Veterinary, medical	\$1,050	\$500
Other cash livestock expenses	\$1,000	\$900
Electricity, power, fuel, and equipment repair	\$900	\$250
Total	\$2,950	\$1,650
5. RETURN ABOVE MARKETABLE FEED AND OTHER VARIABLE DIRECT CASH COSTS (Item 3 - Item 4)	\$9,150	\$20,862
6. OTHER POSSIBLE COSTS*		
Value of non-marketable feeds fed (Item 2 above)		\$9,000
Depreciation, repairs, interest, and taxes on buildings	\$1,450	\$600
Interest on investment in livestock, feed, and equipment	\$1,440	\$6,000
Labor	\$5,400	\$4,500
General farm overhead expenses	\$325	\$900
Total	\$8,615	\$21,000
7. RETURN ABOVE ALL COST (Item 5 - Item 6)	\$535	(\$138)
*Use your actual costs or estimates furnished from Manual 73.		

HOG ENTERPRISE

	Above	Average	Below	Immediate Attention		Undecided	Satisfactory Performance	
1. Pounds of Pork Produced				1	2	3	4	5
2. Pounds of Pork/Litter				1	2	3	4	5
3. Total Returns				1	2	3	4	5
4. Value of Feed Fed				1	2	3	4	5
5. Returns Per \$100 Feed Fed				1	2	3	4	5
6. Returns Above Feed Per Litter				1	2	3	4	5
7. Number of Litters Farrowed				1	2	3	4	5
8. Pigs Farrowed Per Litter				1	2	3	4	5
9. Pigs Weaned Per Litter				1	2	3	4	5
10. Litters Farrowed/Female/Year				1	2	3	4	5
11. Pigs Weaned/Female/Year				1	2	3	4	5
12. Death Loss:								
Numbers				1	2	3	4	5
Pounds				1	2	3	4	5
Percent of Pounds Produced				1	2	3	4	5
13. Weight Per Hog Sold				1	2	3	4	5
14. Price Received Per 100 Pounds				1	2	3	4	5
15. Total Return Per 100 Pounds Produced				1	2	3	4	5
16. Feed Cost Per 100 Pounds Produced				1	2	3	4	5
17. Pounds Feed Per 100 Pounds Produced:								
Farm Grains				1	2	3	4	5
Commercial Feeds				1	2	3	4	5
Total Concentrates				1	2	3	4	5
Pasture Days				1	2	3	4	5
18. Cost Per 100 pounds of Commercial Feeds				1	2	3	4	5
19. Cost Per 100 pounds of Concentrates				1	2	3	4	5

FEEDER PIG PRODUCING ENTERPRISE

	Above	Average	Below	Immediate Attention		Undecided	Satisfactory Performance	
1. Pounds of Pork Produced				1	2	3	4	5
2. Pounds of Pork/Litter				1	2	3	4	5
3. Total Returns				1	2	3	4	5
4. Value of Feed Fed				1	2	3	4	5
5. Returns Per \$100 Feed Fed				1	2	3	4	5
6. Returns Above Feed Per Litter				1	2	3	4	5
7. Number of Litters Farrowed				1	2	3	4	5
8. Pigs Farrowed Per Litter				1	2	3	4	5
9. Pigs Weaned Per Litter				1	2	3	4	5
10. Litters Farrowed/Female/Year				1	2	3	4	5
11. Pigs Weaned/Female/Year				1	2	3	4	5
12. Death Loss:								
Numbers				1	2	3	4	5
Pounds				1	2	3	4	5
Percent of Pounds Produced				1	2	3	4	5
13. Weight Per Hog Sold				1	2	3	4	5
14. Price Received Per 100 Pounds				1	2	3	4	5
15. Total Return Per 100 Pounds Produced				1	2	3	4	5
16. Feed Cost Per 100 Pounds Produced				1	2	3	4	5
17. Pounds Feed Per 100 Pounds Produced:								
Farm Grains				1	2	3	4	5
Commercial Feeds				1	2	3	4	5
Total Concentrates				1	2	3	4	5
Pasture Days				1	2	3	4	5
18. Cost Per 100 Pounds of Commercial Feeds				1	2	3	4	5
19. Cost Per 100 Pounds of Concentrates				1	2	3	4	5

FEEDER CATTLE ENTERPRISE

	Above	Average	Below	Immediate Attention		Undecided	Satisfactory Performance	
1. Total Pounds Produced				1	2	3	4	5
2. Total Returns				1	2	3	4	5
3. Value of Feed Fed				1	2	3	4	5
4. Returns Per \$100 Feed Fed				1	2	3	4	5
5. Average Weight Purchased				1	2	3	4	5
6. Price Paid Per 100 Pounds				1	2	3	4	5
7. Average Weight Sold				1	2	3	4	5
8. Price Received Per 100 Pounds				1	2	3	4	5
9. Total Return Per 100 Pounds Produced				1	2	3	4	5
10. Feed Cost Per 100 Pounds Produced				1	2	3	4	5
11. Death Loss:								
Numbers				1	2	3	4	5
Pounds				1	2	3	4	5
Percent of Pounds Produced				1	2	3	4	5
12. Pounds Feed Per 100 Pounds Produced:								
Grains				1	2	3	4	5
Protein and Minerals				1	2	3	4	5
Total Concentrates				1	2	3	4	5
Hay and Dry Roughage				1	2	3	4	5
Other Silage				1	2	3	4	5
Corn Silage				1	2	3	4	5
Pasture Days				1	2	3	4	5
Hay Equiv.--Tons				1	2	3	4	5

FEEDER PIG FEEDING ENTERPRISE

	Above	Average	Below	Immediate Attention		Undecided	Satisfactory Performance	
1. Total Pounds Produced				1	2	3	4	5
2. Total Returns				1	2	3	4	5
3. Value of Feed Fed				1	2	3	4	5
4. Returns Per \$100 Feed Fed				1	2	3	4	5
5. Average Weight Purchased				1	2	3	4	5
6. Price Paid Per 100 Pounds				1	2	3	4	5
7. Average Weight Sold				1	2	3	4	5
8. Price Received Per 100 Pounds				1	2	3	4	5
9. Total Return Per 100 Pounds Produced				1	2	3	4	5
10. Feed Cost Per 100 Pounds Produced				1	2	3	4	5
11. Death Loss: Numbers Pounds Percent of Pounds Produced				1	2	3	4	5
				1	2	3	4	5
				1	2	3	4	5
12. Pounds Feed Per 100 Pounds Produced: Grains Protein and Minerals Total Concentrates				1	2	3	4	5
				1	2	3	4	5
				1	2	3	4	5
13. Cost Per 100 Pounds of Commercial Feeds				1	2	3	4	5
14. Cost Per 100 Pounds of Concentrates				1	2	3	4	5

BEEF COW ENTERPRISE

	Above	Average	Below	Immediate Attention		Undecided	Satisfactory Performance	
1. Number of Cows in Herd				1	2	3	4	5
2. Animal Units in Herd				1	2	3	4	5
3. Total Pounds Produced				1	2	3	4	5
4. Total Returns				1	2	3	4	5
5. Value of Feed Fed				1	2	3	4	5
6. Returns Per \$100 Feed Fed				1	2	3	4	5
7. Returns Above Feed/Cow				1	2	3	4	5
8. Pounds of Beef Per Cow in Herd				1	2	3	4	5
9. Death Loss:								
Numbers				1	2	3	4	5
Pounds				1	2	3	4	5
Percent of Pounds Produced				1	2	3	4	5
10. Feed Cost/Unit: 100 Pounds Milk or 100 Pounds Beef				1	2	3	4	5
11. Price Received for 100 Pounds Sold				1	2	3	4	5
12. Pounds Feed Per 100 Pounds								
Grains				1	2	3	4	5
Protein and Minerals				1	2	3	4	5
Total Concentrates				1	2	3	4	5
Hay and Dry Roughage				1	2	3	4	5
Other Silage				1	2	3	4	5
Corn Silage				1	2	3	4	5
Pasture Days				1	2	3	4	5
Hay Equiv.--Tons				1	2	3	4	5
13. Pasture Days Per Animal Unit				1	2	3	4	5
14. Hay Equiv. Per Cow--Tons				1	2	3	4	5

DAIRY CATTLE ENTERPRISE

	Above	Average	Below	Immediate Attention		Undecided	Satisfactory Performance	
1. Number of Cows				1	2	3	4	5
2. Percent of Cows Dry				1	2	3	4	5
3. Animal Units in Herd				1	2	3	4	5
4. Total CWT of Milk Produced				1	2	3	4	5
5. Pounds of Beef Produced				1	2	3	4	5
6. Total Returns				1	2	3	4	5
7. Value of Feed Fed				1	2	3	4	5
8. Returns Per \$100 Feed Fed				1	2	3	4	5
9. Returns Above Feed Per Cow				1	2	3	4	5
10. Pounds of Beef Per Cow				1	2	3	4	5
11. Pounds of Milk Per Cow				1	2	3	4	5
12. Pounds of Butterfat Per Cow				1	2	3	4	5
13. Death Loss: Percent of Pounds Produced				1	2	3	4	5
14. Feed Cost/Unit: 100 Pounds Milk or 100 Pounds Beef				1	2	3	4	5
15. Price Received for:				1	2	3	4	5
				1	2	3	4	5
16. Pounds of Feed/Units of Milk or Beef:				1	2	3	4	5
Grains				1	2	3	4	5
Protein and Minerals				1	2	3	4	5
Total Concentrates				1	2	3	4	5
Hay and Dry Roughage				1	2	3	4	5
Other Silage				1	2	3	4	5
Corn Silage				1	2	3	4	5
Pasture Days								
17. Pasture Days Per Animal Unit				1	2	3	4	5
18. Hay Equiv. Per Cow--Tons				1	2	3	4	5

SHEEP ENTERPRISE

	Above	Average	Below	Immediate Attention		Undecided	Satisfactory Performance	
1. Total Pounds Produced				1	2	3	4	5
2. Total Returns				1	2	3	4	5
3. Value of Feed Fed				1	2	3	4	5
4. Returns Per \$100 Feed Fed				1	2	3	4	5
5. Percent Lamb Crop				1	2	3	4	5
6. Death Loss: Percent of Pounds Produced				1	2	3	4	5
7. Feed Cost Per 100 Pounds Produced				1	2	3	4	5
8. Price Received Per 100 Pounds Sold				1	2	3	4	5
9. Pounds Feed Per 100 Pounds Produced:				1	2	3	4	5
Concentrates				1	2	3	4	5
Hay and Dry Roughage				1	2	3	4	5
Other Silage				1	2	3	4	5
Corn Silage				1	2	3	4	5
Pasture Days				1	2	3	4	5
Hay Equiv.				1	2	3	4	5

FARM BUSINESS MANAGEMENT ANALYSIS

Unit II: Analyzing the Farm Business

Lesson 8: Analyzing Crop Enterprises

A. Review

The previous lesson, Analyzing Livestock Enterprises, should be reviewed. List all conclusions reached at your last meeting. Possible conclusions may have included:

1. A number of important profitability factors are common to all livestock enterprises.
2. Each livestock enterprise must be analyzed separately.
3. A weakness in one factor does not mean anything in itself but must be considered in relationship with all other factors.
4. Improvement is difficult until you have a good understanding of the present situation and of how you compare with others.
- 5.

B. Objective

To be able to analyze the various crop enterprises and determine strengths and weaknesses in the cropping program.

C. Motivation

Begin this lesson by asking the enrollees which crop grown was most profitable for them last year. Write the name of each crop mentioned on the board and the number of times it was mentioned beside it. Repeat this procedure for each of the past four or five years and try to come to some sort of consensus about which crops have been the most profitable and about why certain crops work better for some enrollees than for others. Next, ask some questions to get the enrollees thinking about problems in analyzing a cropping enterprise. For example, why not grow only one crop that has historically been the most profitable? What are the most important factors in crop profitability? What are the disadvantages or trade-offs in staying with one or two crops? How have crop rotations affected crop yields, fertilizer costs, pesticide costs, soil structure and tilth? Can I afford to take a lower yield in return for better soil conservation?

These questions and others brought into the discussion by the enrollees will help stimulate thought toward crop analysis.

As the leader of the discussion, you need to point out that analyzing individual crops is necessary and good, but that, realistically, all crops grown must be considered as part of a total cropping program, and that the program as a whole must be analyzed because of the relationships various crops have with each other.

D. Key Points

Key points that will be accomplished are as follows:

1. *What are the profitability factors in crop production?*
2. *How do I analyze my crop enterprises?*
3. *How can I make my crop enterprises more profitable?*
4. *How can I compare rental agreements?*

E. Introduction of Information

Begin the introduction of information by telling enrollees that we will first discuss the importance and impact of each profitability factor. We will then work toward using information from the FBMA analysis forms in making individual analyses of crop enterprises.

1. *What are the profitability factors in crop production?*
 - a. Have enrollees get out their FBMA analysis forms or the FBMA sample analysis forms if their own forms are not available and lay the profit and loss (blue) statement in front of them. They can follow along on the forms while you point out the various profitability factors in crop production. While showing TM-8.1, discuss each profitability factor relating to crops and show where each figure is found and how it is arrived at. Information used in crop analysis comes from the crop production analysis on the bottom left of the profit and loss summary and from the FARM RETURNS AND COSTS section on the right half of the profit and loss summary. Below are comments and examples of each factor to aid in your discussion.
 - (1) CROP YIELDS--are expressed in bushels/acre for corn, soybeans, wheat, oats, milo and barley. Fescue seed is

expressed in hundred weight/acre. Haylage, corn and sorghum silage, alfalfa hay, legume and grass hay, and red clover hay are expressed in tons/acre. Cotton is expressed in pounds/acre. Miscellaneous and other crops are expressed as commonly known.

- (2) LAND USE %/crop--indicates percentage of tillable acres planted to each crop. For example, as on the FBMA sample analysis forms, 165 acres corn $\div$ 730 tillable acres = 22.6% of the farm in corn.
- (3) PRICE RECEIVED/unit--price is expressed as price per unit as expressed in yield per acre. For example, \$6.61/bu. for soybeans, \$3.31/bu. for wheat, etc.
- (4) CROP RETURNS/tillable acre--crop returns/acre = (crop sales + value of crop used for seed + value of feed fed to livestock + inventory change for the year - crop purchased - value of milk fed) $\div$ tillable acres.
- (5) SOIL FERTILITY: cost per tillable acre--soil fertility/tillable acre = (total fertilizer purchased + or - difference in amount of prepaid fertilizer from the beginning to the end of the year) $\div$ tillable acres.
- (6) HERBICIDES, INSECTICIDES AND OTHER CHEMICALS: cost per tillable acre--pesticides/tillable acre = (total pesticides purchased + or - difference in amount of prepaid pesticides from the beginning to the end of the year) $\div$ tillable acres.
- (7) SEED: cost per tillable acre--seed/tillable acre = (total seed purchased + or - difference in amount of prepaid seed from the beginning to the end of the year) $\div$ tillable acres.
- (8) POWER & EQUIPMENT COST TOTAL/tillable acre--power and equipment cost/tillable acre = [utilities + machinery repairs + machine hire + fuel and oil + auto (farm share) + machinery depreciation + or - difference in amount of prepaid items from the beginning to the end of the year] $\div$ tillable acres. Not all of this amount is attributed to crops. Each enrollee will have to determine what percentage should be allocated to the crop enterprise and what percentage should be allocated to the livestock enterprise.

- (9) DRYING AND STORAGE: cost per tillable acre--drying and storage/tillable acre = (total cost of drying and storage + or - difference in prepaid drying and storage costs from the beginning of the year) ÷ tillable acres.

- b. After discussing each crop profitability factor, work through some examples on how to calculate each factor. Preferably, use figures from one of the enrollees' printouts. As you figure examples on the board, have enrollees check the figures on their own printouts. The main idea here is that the enrollees will know how figures are derived for the crop analysis. The main problem in doing this exercise is knowing how much of an item was prepaid at the beginning and at the end of the year. The enrollees will need to look back at their beginning and closing inventories to find these figures.

2. *How do I analyze my crop enterprises?*

In analyzing crop enterprises, we will first look at whether or not the enterprises have been profitable and then look at how to determine weaknesses and strengths by comparing "MY FARM" with the "AVERAGE FARM."

- a. Have enrollees refer to the FBMA sample analysis forms and discuss how to make a quick evaluation of the profitability of the cropping program. Use the following procedure in developing the discussion.
- (1) Show TM-8.2 and discuss the general formula presented there for obtaining "management returns attributable to the crops." Going back to the FBMA sample analysis forms, ask the enrollees if the cropping enterprise on the sample farm was a profitable one.
 - (2) Now have the enrollees examine their own crop enterprises for profitability. Using the formula as shown on TM-8.2, have the enrollees use the figures on their own FBMA analysis forms to come up with "management returns attributable to crops" for their own farms. This is an individual activity for each enrollee or couple to work on alone. Save any personal discussion of findings for individual instruction sessions.
 - (3) The third step in analyzing the crop enterprise is comparing "MY FARM" to the "AV. FARM." Have enrollees compare each cropping profitability factor with

the average farm, pointing out that each comparison must be evaluated with more than just a + or - difference. Questions the enrollees need to ask themselves include: Is my yield higher or lower than average? Is the difference because of something I did right or wrong, or was it due to factors beyond my control? How do I rate on prices received for the various crops? Should better marketing be a goal, or am I satisfied? Are my costs in line with the average? If my costs are higher, are my returns also enough better to make up the difference? Was this a normal year? If it was not a normal year, would my cropping be profitable in an average year?

At this point enrollees will probably want to insert some ideas into the discussion concerning past experiences with the cropping enterprises.

3. *How can I make my crop enterprises more profitable?*

- a. Show TM-8.3, which outlines a logical procedure for enrollees to use to begin thinking toward making the cropping enterprises more profitable. Follow the flow chart through, discussing each point. Use the following points to aid in your discussion.

(1) Check management returns per tillable acre for crops.

If this figure is high, a good profit is already being made in the cropping enterprises, and the enrollees should evaluate their income goals. If they are happy, no particular changes may be desired. However, if the present cropping system has been consistently successful, expansion may be in order. If so, the enrollee needs to look at the profitability of each individual crop over the years.

If the figure is low, check the value of crop production, or crop returns.

- (2) If crop returns are high with management returns low, this is a signal that costs are excessive. Check cash and non-cash costs such as fertility costs, pesticide costs, machine costs, etc. It is important to remember the principle of diminishing returns in determining the optimum amount to spend on each crop input.**

If the value of crop production or crop returns is low, check such factors as crop yields, land use, and selling prices. Try to pinpoint some problem spots and develop solutions.

- b. Give enrollees a copy of HO-8.2, Crop Enterprise Checklist, to use in a self-evaluation of their crop enterprises. Give them adequate time to complete each checklist, or if short of time, ask them to complete the lists before the next individual meetings.
- c. Summarize this key point by showing TM-8.4 to give enrollees a little food for thought. Remind them that we can never make sound decisions based strictly on one year's analysis, but that we must do a continuing analysis. The questions on TM-8.4 are all important ones for the enrollees to ask themselves. Ask the enrollees for any other questions that they might ask themselves in order to get a foothold on improving their cropping enterprises.

4. *How can I compare rental agreements?*

- a. Distribute two copies of HO-8.1 (TM-8.5) to enrollees. While showing TM-8.5, discuss the worksheet and how it is completed. Go over the footnotes to make sure that everyone understands how each item is figured. Emphasize to the enrollees that it is very important to use a rental agreement that is fair to both parties over a period of years and that if an agreement is biased in favor of one party or another, the agreement is not likely to last. Also, point out that it is important to try to normalize the agreement. In other words, try to use yields, costs, and figures that would occur in a normal or average year, instead of using what happened last year. Also, distribute HO-8.4 to compare some alternative agreements and HO-8.5 to provide considerations for figuring cash rent.
- b. Give enrollees a copy of HO-8.3. Divide the class into about four groups and let each group do one kind of agreement using the sample problem. Help them get over any problems they may have. When the enrollees have finished, ask them to compare answers and validate each other's figures.
- c. Discuss the questions at the top of the problem. During the discussion, point out that there are always considerations other than those costs and figures included in the problems. A

renter should always think of other considerations. For example, is the landlord trustworthy? Will the rental agreement last for more than one or two years? Is the landlord interested in soil conservation? Will the landlord want high-profit crops grown continuously, or is a soil conserving rotation a priority? Enrollees should ask themselves these types of questions in addition to working through the cost-return problems when they are considering rental agreements.

F. Discussion

Sufficient time should be allotted for enrollees to ask questions and discuss any problems associated with the lesson. Be sure that they understand where all of the figures come from on the handout that pertains to the cropping enterprise.

G. Conclusions

Conclusions that may be reached include:

1. It is impossible and impractical to make sweeping changes in a cropping program based on just one year's analysis.
2. Management returns per acre are an important indicator of the profitability of the farming operation as a whole.
3. All factors considered in the profitability of crop enterprises must be considered in relationship to each other.
- 4.

Announcements

Next meeting, we will be analyzing machinery costs and investments.

Social

Individual Instruction

When meeting with enrollees following this lesson, sit down with them and discuss their cropping program as it relates to what we worked on in this lesson. Go through their computer printout together and point out strengths and weaknesses in last year's cropping program. Visit with them about this year's cropping plans and go over any technical information that may be of help. Discuss also any marketing problems that they have had in the past and any alternatives in marketing that may be of help.

Materials Needed

Instructor

- TM-8.1 Profitability Factors in Crop Production
- TM-8.2 Crops--How Profitable?
- TM-8.3 Troubleshooting the Crop Enterprise
- TM-8.4 Improving the Crop Enterprise
- TM-8.5 Testing Customary Leases (combined with HO-8.1)
- FBMA sample analysis forms

Student

- HO-8.1 Testing Customary Leases (combined with TM-8.5)
- HO-8.2 Crop Enterprise Checklist
- HO-8.3 Comparing Rental Agreements
- HO-8.4 Comparison of Corn Leases
- HO-8.5 Figuring Cash Rent for Cropland
- Missouri Farm Business Record Book
- FBMA sample analysis forms or enrollee's own individual FBMA analysis forms

PROFITABILITY FACTORS IN CROP PRODUCTION

Crop Yields

Land Use % / Crop

Price Received / Unit

Crop Returns / Tillable Acre

Soil Fertility: Cost Per Tillable Acre

Herbicides, Insecticides and Other Chemicals:
Cost Per Tillable Acre

Seed: Cost Per Tillable Acre

Power & Equipment Total: Cost Per Tillable Acre

Drying and Storage: Cost Per Tillable Acre

CROPS -- HOW PROFITABLE?

$$\begin{array}{r}
 \text{Crop Returns per Acre} \\
 \text{minus} \\
 \text{Soil Fertility per Acre} \\
 \text{minus} \\
 \text{Herbicides, Insecticides and Other Chemicals per Acre} \\
 \text{minus} \\
 \text{Seed per Acre} \\
 \text{minus} \\
 \text{Crops Share of Power \& Equipment Total per Acre} \\
 \text{minus} \\
 \text{Drying \& Storage per Acre} \\
 \text{minus} \\
 \text{Crops Share of Building Repair And} \\
 \text{Depreciation per Acre} \\
 \text{minus} \\
 \text{Crops Share of Labor Total per Acre} \\
 \text{minus} \\
 \text{Crops Share of Insurance, Taxes, Misc. And} \\
 \text{Interest Chg. Land per Acre} \\
 \\
 \text{equals} \\
 \\
 \text{Management Returns Attributable to Crops}
 \end{array}$$

TROUBLESHOOTING THE CROP ENTERPRISE

Check Management Returns/
Tillable Acre For Crops



IF HIGH

Look at LIVESTOCK,
check against FAMILY
NEEDS and INCOME
GOALS, adjust size of
CROPPING
ENTERPRISE to meet
INCOME GOALS

IF LOW

Check VALUE of
CROP PRODUCTION



IF HIGH

Proceed to
check Crop
Costs:
Cash and
Non-Cash.

IF LOW

Check:
(A) Crop
Yields
(B) Land
Use
(C) Selling
Prices

IMPROVING
THE CROP ENTERPRISE

Was this a "NORMAL YEAR?"

Did I make MONEY on CROPS?

Did I MARKET well?

How can I IMPROVE?

TESTING CUSTOMARY LEASES

Crop:	Corn		Your Lease	
Production Per Acre and Crop Division				
1. Market value of land	\$1,000.00			
2. Average yield per acre (bushels)	100			
3. Value per unit	\$2.50			
4. Gross value/ac. (L. 2 x L. 3)	\$250.00			
5. Parties: Tenant (T), Landlord (L)	(T)	(L)	(T)	(L)
6. Leasing agreement (% share)	50	50		
7. Gross income (L. 4 x L. 6)	\$125.00	\$125.00		
Cash Production Cost Contribution				
8. Seed	\$10.50	\$10.50		
9. Fertilizer a. Annual b. Basic	\$22.50 XX	\$22.50 45.00		
10. Chemicals	\$11.00	\$11.00		
11. Machine, hire, applying fert., etc. (\$3 to \$6)	\$4.00	XX		
12. Crop drying (6¢ to 10¢ per bu.)	\$3.50	\$3.50		
13. Landowner share: ¹ a. Harvesting b. Hauling	-\$12.00 - \$5.00	\$12.00 \$5.00		
14. Irrigation costs: variable	XX	XX		
15. Machinery: variable	\$22.00	XX		
16. Hired labor (\$3 to \$4/hour)	XX	XX		
17. Land taxes per acre	XX	\$3.00		
18. Other: operating interest	\$3.00	\$3.50		
19. Total Cash Contributions (add L. 8 through L. 18)	\$ 59.50	\$ 76.00		
Non-Cash Production Cost Contribution				
20. Interest on land (4.5% L. 1)	XX	\$ 40.00		
21. Land maintenance ²	XX	\$3.00		
22. Machinery: fixed	\$24.00	XX		
23. Operator's labor	\$20.00	XX		
24. Management (7% to 10% L. 4)	\$22.00	XX		
25. Irrigation equipment, fixed	XX	XX		
26. Other: fence	XX	\$3.00		
27. Total Non-Cash Costs (add L. 20 through L. 26)	\$ 66.00	\$ 46.00		
28. Total Cost Contributions (L. 19 + L. 27)	\$125.50	\$122.00		
29. Income above Total Costs (L. 7 minus L. 28)	- \$.50	\$ 3.00		

¹Machinery and labor costs reported on Lines 15, 16, 22, and 23 are assumed adequate for producing 100% of the crop. On Line 13, the landowner is credited for payment to tenant or custom operator and debited against tenant because the landowner's machinery and labor contributions are reduced.

²On most farms, either the tenant or landowner has an annual cost for maintaining terracing systems, etc. If this is a normal annual cost to the landowner or tenant, the appropriate one should be credited for this cost on Line 21.

Source: Taken from averages of the 1992 FBMA Summary of Records and MO. Agricultural Statistics Service.

CROP ENTERPRISE CHECKLIST

	Above	Average	Below	Immediate Attention		Undecided	Satisfactory Performance	
1. Crop Yield				1	2	3	4	5
Corn				1	2	3	4	5
Soybeans				1	2	3	4	5
Wheat				1	2	3	4	5
Oats				1	2	3	4	5
Fescue				1	2	3	4	5
Haylage				1	2	3	4	5
Corn & Sorghum Silage				1	2	3	4	5
Alfalfa				1	2	3	4	5
Legumes & Grasses				1	2	3	4	5
Milo				1	2	3	4	5
Red Clover				1	2	3	4	5
Cotton				1	2	3	4	5
Barley				1	2	3	4	5
Other Crops				1	2	3	4	5
2. Land Use %				1	2	3	4	5
Corn				1	2	3	4	5
Soybeans				1	2	3	4	5
Wheat				1	2	3	4	5
Oats				1	2	3	4	5
Fescue				1	2	3	4	5
Haylage				1	2	3	4	5
Corn & Sorghum Silage				1	2	3	4	5
Alfalfa				1	2	3	4	5
Legumes & Grasses				1	2	3	4	5
Milo				1	2	3	4	5
Red Clover				1	2	3	4	5
Cotton				1	2	3	4	5
Barley				1	2	3	4	5
Other Crops				1	2	3	4	5

	Above	Average	Below	Immediate Attention		Undecided	Satisfactory Performance	
3. Price Received				1	2	3	4	5
Corn				1	2	3	4	5
Soybeans				1	2	3	4	5
Wheat				1	2	3	4	5
Oats				1	2	3	4	5
Fescue				1	2	3	4	5
Haylage				1	2	3	4	5
Corn & Sorghum Silage				1	2	3	4	5
Alfalfa				1	2	3	4	5
Legumes & Grasses				1	2	3	4	5
Milo				1	2	3	4	5
Red Clover				1	2	3	4	5
Cotton				1	2	3	4	5
Barley				1	2	3	4	5
Other Crops				1	2	3	4	5
4. Crop Returns per tillable acre				1	2	3	4	5
5. Soil Fertility Cost per tillable acre				1	2	3	4	5
6. Pesticide Cost per tillable acre				1	2	3	4	5
7. Seed Cost per tillable acre				1	2	3	4	5
8. Utilities Cost per tillable acre				1	2	3	4	5
9. Machinery Repairs per tillable acre				1	2	3	4	5
10. Machine Hire per tillable acre				1	2	3	4	5
11. Fuel & Oil Cost per tillable acre				1	2	3	4	5
12. Auto-Farm Share per tillable acre				1	2	3	4	5
13. Machinery Depreciation per tillable acre				1	2	3	4	5
14. Power & Equipment Total Cost per tillable acre				1	2	3	4	5
15. Total Building Costs per tillable acre				1	2	3	4	5
16. Total Labor Cost per tillable acre				1	2	3	4	5

COMPARING RENTAL AGREEMENTS

Using HO-8.1, determine which of the proposed rental agreements would be most desirable for the renter and which would be most desirable for the landlord. Which one do you think would be the fairest for the landlord and renter over a period of time?

Farmer Jones has the opportunity of renting some additional land next year. The landlord wants corn grown on the land and is willing to go cash rent, crop share 50-50, or crop share 1/3-2/3. Jones has estimated costs and values as shown below. If cash rented, the landlord wants \$100/acre cash rent.

- 100 bushels of corn/acre at \$2.50/bu.
- renter can pasture stalks after harvest--value of \$10/acre
- combining--common custom rate at \$20/acre
- herbicide cost of \$22/acre
- figure operating interest at a rate of 9.5 percent
- \$21 seed/acre
- annual fertilizer at \$45/acre
- lime at \$5/acre (applied by landlord)
- the land is worth about \$1,000/acre
- Jones' labor is worth about \$6/hr., figure 4 hrs. labor per acre
- variable machinery cost of \$24/acre
- develop other costs as needed

COMPARISON OF CORN LEASES

	50-50		60-40		67-33		Cash Rent	
Production Per Acre and Land Value								
1. Market value land per acre	\$1,000.00		\$1,000.00		\$1,000.00		\$1,000.00	
2. Estimated avg. yield per acre	100		100		100		100	
3. Estimated price per unit	\$2.50		\$2.50		\$2.50		\$2.50	
4. Est. gross inc/ac. (L.2 x L.3)	\$250.00		\$250.00		\$250.00		\$250.00	
5. Parties: Tenant (T), Ldl. (L)	(T)	(L)	(T)	(L)	(T)	(L)	(T)	(L)
6. Leasing agreement (% share)	50	50	60	40	67	33	100	XX
7. Gross income (L. 4 x L. 6)	\$125.00	\$125.00	\$150.00	\$100.00	\$167.50	\$82.50	\$250.00	\$65.00
Cash Production Cost Contribution								
8. Seed	\$10.50	\$10.50	\$12.60	\$8.40	\$21.00	XX	\$21.00	XX
9. Fertilizer a. Annual	\$22.50	\$22.50	\$27.00	\$18.00	\$30.15	\$14.85	\$45.00	XX
b. Basic	XX	\$5.00	XX	\$5.00	XX	\$5.00	XX	\$5.00
10. Chemicals	\$11.00	\$11.00	\$13.20	\$8.80	\$14.74	\$7.26	\$22.00	XX
11. Mach. hire/applying fert./etc.	\$4.00	XX	\$4.00	XX	\$4.00	XX	\$4.00	XX
12. Crop drying	\$3.50	\$3.50	\$4.20	\$2.80	\$7.00	XX	\$7.00	XX
13. Landowner share:								
a. Harvesting	-\$12.00	\$12.00	XX	XX	XX	XX	XX	XX
b. Hauling	-\$5.00	\$5.00	XX	XX	XX	XX	XX	XX
c. Cash Rent							\$65.00	XX
14. Irrigation costs: variable	XX	XX	XX	XX	XX	XX	XX	XX
15. Machinery: variable	\$22.00	XX	\$22.00	XX	\$22.00	XX	\$22.00	XX
16. Hired labor	XX	XX	XX	XX	XX	XX	XX	XX
17. Land taxes per acre	XX	\$3.00	XX	\$3.00	XX	\$3.00	XX	\$3.00
18. Other: operating interest	3.00	3.50	3.90	2.60	4.35	2.14	8.82	XX
19. Total Cash Contributions (add L. 8 through L. 18)	\$ 59.50	\$ 76.00	\$86.90	\$48.60	\$103.24	\$32.25	\$194.82	\$8.00
Return Over Variable Cost	\$65.50	\$49.00	\$63.10	\$51.40	\$64.26	\$50.25	\$55.18	\$47.00
Non-Cash Production Cost Contribution (Variations in cost decrease for operator as amount paid for rented land decreases.)								
20. Interest on land (4% L. 1)	XX	\$ 40.00	XX	\$40.00	XX	\$40.00	XX	\$40.00
21. Land maintenance	XX	\$3.00	XX	\$3.00	XX	3.00	XX	3.00
22. Machinery: fixed (avg. cost)	\$24.00	XX	\$24.00	XX	\$24.00	XX	24.00	XX
23. Operator's labor	\$20.00	XX	\$20.00	XX	\$20.00	XX	20.00	XX
24. Management (7-10% x L.4)	\$22.00	XX	\$22.00	XX	\$22.00	XX	22.00	XX
25. Irrigation equipment, fixed	XX	XX	XX	XX	XX	XX	XX	XX
26. Other: fence	XX	\$3.00	XX	\$3.00	XX	3.00	XX	3.00
27. Total Non-Cash Costs (add L. 20 through L. 26)	\$66.00	\$46.00	\$66.00	\$46.00	\$66.00	\$46.00	\$66.00	\$46.00
28. Total Cost Contributions (L.19 + L.27)	\$125.50	\$122.00	\$152.90	\$94.60	\$169.24	\$78.25	\$260.82	\$54.00
29. Income above Total Costs (L.7 - L.28)	- \$.50	\$3.00	- \$2.90	\$5.40	- \$1.74	\$4.25	- \$10.00	\$11.00

Source: Taken from averages of the 1992 FBMA Summary of Records and MO. Agricultural Statistics Service.

FIGURING CASH RENT FOR CROPLAND

What can we anticipate as an increase or decrease in cash rent paid for cropland in the future? Weather conditions experienced in past years have influenced rent substantially, as well as prices received and operating costs. According to the USDA, the average rent paid for cropland in Missouri in 1980 was \$66.70. Today's cash rent market is around \$85 to \$110 per acre.

The tenant's financial position will affect the amount of risk the tenant is willing to sink into a flat cash rent per acre. For example, in areas where crop losses were moderate to severe, the tenant may:

--Try to shift to a crop-share rental arrangement (50-50, 60-40) so that he or she can eliminate the fixed payment and at the same time ask the landowner to bear some of the risk by paying a share of cash production costs.

--Negotiate for a lower or the same rent paid in last year's contract.

The landowner's reaction may be to:

--Accept an offer of crop-share arrangement with the tenant.

--Accept the same rent as in the previous year or possibly a lower rent. The demand for land to rent within an area or community will affect this decision.

--Go into custom farming. With custom farming, the farmer with machinery receives a cash payment to produce a crop. The landowner pays all other production costs, receives all the returns, and also bears all the risk--just the opposite of cash rent.

Many factors affect cash rent at the present: CRP and set-aside land, forecast for higher crop prices, number of cash renters, etc. However, the cost of producing a crop is also climbing. So, the final decision made through negotiation between the tenant and landowner will establish the cash rent for the present year.

To negotiate a cash rent, two considerations are important. These are:

- Landowner costs associated with his/her real estate investment.
- Maximum cash rent the tenant can afford to pay.

I. Landowner costs associated with his/her investment in cropland.

	<u>Example</u>	<u>Your Farm</u>
1. Market value of land per acre	\$1,000.00	\$
2. Interest on land: 4% times L. 1	40	
3. Real estate taxes	\$3.00	
4. Basic fertilizer (annual charge)	\$5.00	
5. Land maintenance	\$3.00	
6. Fences: depreciation and repair	\$3.00	
7. TOTAL COSTS (add L. 2 through L. 6)	\$ 54.00	\$

The landowner will want at least \$60 per acre, and the asking price will probably range from \$50 to \$70 per acre, depending on the productivity of land, location, number of tenants wanting to cash rent, etc.

II. Maximum cash rent per acre the tenant can afford to pay to grow corn or soybeans.

	<u>Corn</u>	<u>Soybeans</u>	<u>Your Farm</u>
1. Estimated yield per acre	100	35	
2. Estimated harvest price per bu.	\$2.50	\$5.25	
3. Estimated gross income per acre	\$250.00	\$183.75	
<u>Tenant's estimated contribution and cash production costs:</u>			
4. Seed	\$21.00	\$ 13.00	
5. Annual fertilizer	\$45.00	\$16.50	
6. Chemicals	\$22.00	\$25.00	
7. Crop drying, 10¢/bu.	\$7.00	--	
8. Miscellaneous costs			
9. Machinery costs: a. variable	\$22.00	\$21.00	
b. hired	\$4.00	--	
c. fixed	\$24.00	\$19.00	
10. Oper. interest (L. 4-9b x 50% + 25% cash rent x 12%)	\$8.00	\$6.00	
11. Labor	\$20.00	\$16.00	
12. Management, 7-10% of L. 3	\$22.00	\$19.00	
13. Total Costs (add L. 4 through L. 12)	\$195.00	\$135.50	\$
14. Maximum rent tenant can pay (L. 3 - L. 13)	\$ 65.00	\$ 48.25	\$

According to these average costs a tenant can estimate a cost per acre for corn and soybean land. (Each individual tenant should base this decision upon his/her own costs.)

With this type of analysis, both parties have a basis on which to bargain. Through negotiation, they can agree on a rent at some point between \$40 and \$60 per acre. To negotiate a higher cash rent than the maximum, the tenant either expects higher yields and prices or is willing to give up a portion of the labor and management on Lines 11 and 12 and/or a part of the fixed costs on Line 9c--or his/her production costs are lower than those used in the example.

FARM BUSINESS MANAGEMENT ANALYSIS

Unit II: Analyzing the Farm Business

Lesson 9: Analyzing Machinery, Equipment, and Building Costs

A. Review

The previous lesson, Analyzing Crop Enterprises, should be reviewed. List all conclusions reached at your last meeting. Possible conclusions may have included:

1. It is impossible and impractical to make sweeping changes in a cropping program based on just one year's analysis.
2. Management returns per acre are an important indicator of the profitability of the farming operation as a whole.
3. All factors considered in the profitability of crop enterprises must be considered in relationship to each other.
- 4.

B. Objective

To determine the most profitable selection and management of machinery, equipment, and facilities.

C. Motivation

Ask the class members to list five items of machinery, buildings and equipment or any combination of the three that they have on their farms and that they could farm without. (Do not have them consider changing enterprises.)

After the lists are complete, ask some of the members to share items to be written on the chalkboard. Most of these items will probably be labor-saving devices that have recently been added to the business. Point out that this example illustrates the principle of resource substitution. If the five items were eliminated, a change would arise in the amount of labor, skill, etc., needed.

This lesson may be one of the most important and most difficult; it can have a large effect on total costs and costs per unit. Each farm business needs to make an individual decision because the amount of capital, land, labor and management available varies among farms.

D. Key Points

Key points that will be accomplished are as follows:

1. *How do I determine my present total investment and total costs per tillable acre?*
2. *What kinds of costs occur in owning machinery/buildings?*
3. *What alternatives are there to ownership, and how do they compare?*
4. *What computer programs are available to help in this area?*

E. Introduction of Information

Point out that machinery, equipment and buildings are "support" investments and that their costs must be recovered by individual enterprises such as corn, wheat, hogs, cattle, etc. If we can reduce some of these costs and maintain optimum production, the business will operate at its most efficient level.

1. *How do I determine my present total investment and total costs per tillable acre?*

Start this key point by using the FBMA sample analysis forms, FARM RETURNS AND COST portion of the profit and loss (blue) statement to illustrate where this information is located on the printout. (Caution the class that the number of farms in each group is indicated on the NO. IN AVERAGE line at the top of the page. Investment in machinery and buildings is under INVESTMENT (bottom portion of page). Number of tillable acres is at LAND INFORMATION (lower right portion of page). Costs per tillable acre are at a combination of POWER & EQUIPMENT TOTAL (\$60.25) and BUILDING TOTAL (\$6.23) (upper center portion of page).

- a. Using the FBMA sample analysis forms, illustrate how to derive investment per tillable acre. As the example, the 600+ acre livestock farm has a beginning machinery investment of \$13,524 and an ending investment of \$12,993 with 730 tillable acres. (One other point: investment is based on depreciated book value.) $(\$13,524 + \$12,993) \div 2 = \$13,258$ average

investment for the year. $\$13,258 \div 730 = \$18.16$ investment per tillable acre. Use the FBMA Summary of Records and the same formula to illustrate a grain farm average investment per tillable acre. If the enrollees have their FBMA analysis forms, let them calculate the investment per tillable acre of machinery and/or buildings for their own situations.

- b. Using the same examples, demonstrate how to determine machinery and/or building costs per tillable acre.
 - (1) These figures have the costs for the current year calculated on a tillable acre basis for the individual farm, the average farm in that group, and the difference. Note the difference in costs per tillable acre for POWER & EQUIPMENT TOTAL (\$60.25 to \$53.26 AVERAGE FARM). Note also that depreciation is usually the largest cost in the examples in the machinery cost total. Let enrollees compare their figures at this point.
 - (2) Show TM-9.1 to illustrate relative trends in costs for an eight-year period (FBMA Missouri Averages).

2. *What kinds of costs occur in owning machinery/buildings?*

Start the discussion of this key point by identifying a machine common to the group such as a large round hay baler. Ask the enrollees to identify "costs" associated with owning a baler and list these on the board. Examples might be: depreciation, repairs, twine, labor, interest, insurance, taxes, tractor use charge, lubrication, and shelter. Next, have the group put these in two columns headed "Fixed" and "Variable". The columns should appear as follows:

Fixed ¹ (ownership)	Variable ² (operating)
Depreciation	Repairs
Interest on Investment	Twine
Insurance	Labor
Taxes	Tractor Use Charge
Shelter	Lubrication
	Fuel

¹Fixed costs are those that remain about the same regardless of the amount of use.

²Variable costs vary with the amount of use.

- a. A farmer is considering the purchase of an \$8,000 baler. Identify the fixed and variable costs for the baler using HO-9.1 (TM-9.2). The baler has an expected life of 7 years using Straight Line-Mid Year Depreciation, and it bales 750 bales per year, 15 bales per hour. (The following problem takes profitability of equipment into consideration and not tax consequences. For example, for tax purposes, machinery would have no salvage value, but in these examples, we will have a remaining value called salvage.) The figures would appear as follows:

(1) Depreciation

$$\frac{\text{original cost} - \text{salvage}}{\text{years life}} = \text{Depreciation}$$

$$\frac{8000 - 3800}{7} = 600$$

(2) Interest on investment

$$\frac{\text{original cost}}{2} \times \text{Interest Rate}$$

$$\frac{8000}{2} = 4000 \times .09 = 360$$

(3) Insurance, Taxes, Shelter (2.5% of cost)

$$8000 \times .025 = 200$$

(4) Total Fixed Costs/Year (1 + 2 + 3)

$$600 + 360 + 200 = 1160$$

(5) Repairs and Maintenance (R + M)

$$\text{Harvesting Equipment } .003 \times 8000 = 2.40$$

$$\text{Cost per hour} \div \text{units per hour} = \text{costs per unit}$$

$$2.40 \text{ per hour} \div 15 \text{ bales per hour} = \$.16 \text{ per bale}$$

(6) Tractor Use Charge

purchase price of tractor (10,000) x .15 = 700 ÷ hours per year = cost per hour (2.14)

cost per hour (2.14) ÷ units per hour (15) = cost/unit (.14)

$$\frac{10,000 \times .15}{700} = 2.14 \quad 2.14 \div 15 = .14$$

(7) Fuel

Average Consumption/Acre*

Plowing	2.50	Drilling	.50
Disc	.65	Planting	.44
Cultivating	.48	Combining	1.45
Mowing	.62	Corn Picking	1.53
Raking	.27	Baling	.65

*Multiply by .72 for diesel fuel.

fuel con./acre x costs per gal = costs/acre

costs per acre ÷ units per acre = costs per unit

$$\frac{.65 \times .72}{3 \text{ bales/acre}} = .15$$

(8) Lubrication

figure .15 of fuel costs

$$.15 \times .15 = .02$$

(9) Supplies (as twine)

estimate/bale = .25

(10) Labor

cost per hour ÷ units per hour = costs per unit

$$\$6.00 \div 15 = .40$$

(11) Total Variable Costs Per Unit (5 + 6 + 7 + 8 + 9 + 10)

$$.16 + .14 + .15 + .02 + .25 + .40 = 1.12$$

(12) Total Variable Cost Per Year

Total Variable Cost Per Year = Estimated Units Per Year x Costs Per Unit

$$750 \times 1.12 = 840$$

(13) Total Cost Per Year

Total Cost Per Year = Total Fixed Costs/Year + Total Variable Cost Per Year

$$1160 + 840 = 2000$$

(14) Total Costs Per Unit

Total Costs Per Unit = Total Cost Per Year $\div$ Units/year

$$2000 \div 750 = 2.66$$

Then, re-figure with 150 bales per year.

$$150 \times 1.12 = 168$$

$$168 + 1160 = 1328 \div 150 = 8.85 \text{ per bale}$$

b. Determine the break even point using the following formula:

$$\frac{\text{Fixed Costs Per Year}}{\text{Custom Rate} - \text{Costs per unit}} = \begin{array}{l} \text{Number of Units Needed} \\ \text{to Break Even on} \\ \text{Owning a Machine} \end{array}$$

Using the above example with a custom rate of \$6.00/bale, the formula works as follows:

$$\frac{1160}{6 - 1.12} = 238 \text{ bales to break even}$$

c. Show the effect of Fixed:Variable Costs by asking what is the minimum price for which a farmer who already owns a baler (as in the example above) would agree to do custom work. (Because labor is included at \$6/hour in the example, if the owner of the baler were willing to work for that figure, the minimum charge would be \$1.12 per bale; however, \$2.66 would be needed to cover all costs at this volume.)

- d. Compare feasibility on the baler. (Many farmers buy machinery to take advantage of expensing and depreciation for income tax savings, but overlook that the second year of payments may not be covered.) The following example illustrates the point: Baler Cost--\$8,000; Life--7 years; Depreciation Method--Straight Line with Mid-Year Convention; Interest 9%; Loan--5 years; Marginal Tax Bracket--28% Federal plus 6% State = 34% total; 300 bales/year; \$6/bale custom charge. For this example we only used \$3,800 expensing (Section 179) on this item. If the farmer did not have other purchases for the year, he/she could have expensed the total \$8,000.

Year	Baling Charge Saved	Tax Savings If Owned	Machine Operating Costs	Interest Payment	Principal Payment	Cash Flow Balance ¹
	(1)	(2)	(3)	(4)	(5)	(6)
1	1800	1712 ²	216 ³	720	1600	+976
2	1800	473 ⁴	216	576	1600	<119>
¹ (Columns 1 + 2) - (Columns 3 + 4 + 5) = Column 6						
² \$3,800 expensing (Section 179) + (\$300 depreciation [1/2 yr. conversion] + \$216 operating costs + \$720 interest) = \$5,036 x .34 = \$1,712						
³ Line 11 of \$1.12 bale minus .40/bale labor x 300 bales = \$216						
⁴ \$600 depreciation + \$216 operating costs + \$576 interest = \$1,392 x .34 = \$473						

The tax savings in Year 1 made the cash flow positive; however, after the expensing is used, the cash flow becomes negative. Also, if no tax is owed (low income year), this purchase has no tax advantage.

- e. At this point, work an example on a building such as a hog finishing floor with fixed costs of \$20/pig capacity per year. Use current variable costs. In earlier years, it was probably not possible to cover total costs, but feeder pigs usually sell low enough to cover variable costs. This has caused many farmers to continue to operate to minimize losses.

3. ***What alternatives are there to ownership, and how do they compare?***

Start this discussion by listing on the board examples that the enrollees can think of such as hire custom work, lease, exchange work with neighbors, etc.

- a. Hire custom work. If the custom rate is less than item 14 (total costs per unit) on HO-9.1, then it would be cheaper to hire it done. Three additional factors need to be considered:

- (1) Timeliness. The following table illustrates the importance:

Operation	% loss of yield per acre per day of delay
Tillage (not delay plant)	0.1
Tillage (delay plant)	0.5
Planting	1.0
Cultivation	0.3
Harvest	0.5

Extension offices have guides on current custom rates.

- (2) Quality of work. If the custom operator loses an extra 3 bushels of corn/acre at \$3/bushel due to poor operation in picking corn, then \$9/acre needs to be added to the custom charge to make a valid comparison.
- (3) Other. Let the group discuss other factors. Frequently, improved planning and scheduling with the custom operator will overcome many of the disadvantages.
- b. Lease. Get multiply copies of Leasing vs. buying equipment, available through the UMC Extension Division. Discuss the lease and work an example to illustrate how to compare this alternative. Leasing is usually not a profitable choice.
- c. Exchange work with neighbors. These other alternatives vary between communities. Different individuals can explain arrangements that they have that may provide some alternatives to other individuals.

4. *What computer programs are available to help in this area?*

The Ag Bulletin Board, UMC, offers free spreadsheets to computer operators with modems. Updates and new spreadsheets are included often, so frequent checking of the listing should be done. If enrollees do not have access to the Ag Bulletin Board, they can contact the state FBMA office for the necessary information.

F. Discussion

Initiate a discussion concerning selecting machinery and/or buildings to maximize income with good feasibility. Factors that must be considered include timeliness, cash flow consequence, alternatives, etc. (Use HO-9.2 (Quiz) to stimulate discussion for leading into the conclusions.)

G. Conclusions

Conclusions that may be reached include:

1. Individuals should analyze their present investment and costs per tillable acre and determine if these are "in line" with the returns.
2. Fixed and variable costs are both present in analysis of investments in machines and/or buildings.
3. It is more profitable to operate than not to operate as long as variable costs are covered in the short run.
4. Custom hiring is an alternative to ownership in many situations.
5. Tax consequences should be considered in an investment.
6. Feasibility (cash flow) of an investment needs to be considered.
- 7.

Announcements

Next lesson, we will be discussing how to utilize farm credit.

Social

Individual Instruction

Suggest to enrollees that the individual instruction sessions this month be used to review their investments and costs per tillable acre and compare them with similar farms. Also, offer to work through some examples with them on the purchase of machinery and/or buildings that they may be considering. Using information and spreadsheets obtained through the Ag Bulletin Board (UMC) or the state FBMA office, run through some programs that fit the farmer's situation.

Materials Needed

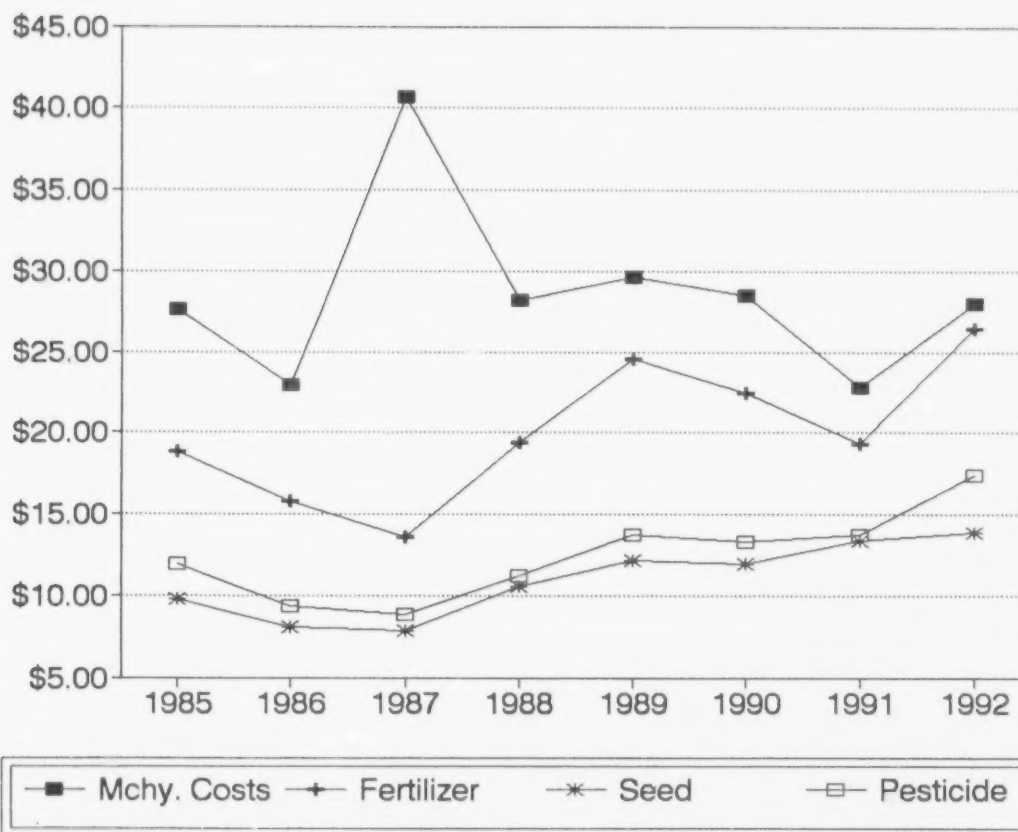
Instructor

- TM-9.1 Trends in Selected Operating Costs Per Tillable Acre for 300-600 Acre Grain Farms (FBMA Missouri Averages)
- TM-9.2 Costs of Owning a Machine (combined with HO-9.1)
- Leasing vs. buying equipment, Agricultural Guide, UMC Extension Division (multiple copies)
- FBMA Summary of Records (available from FBMA state office)
- FBMA sample analysis forms

Student

- HO-9.1 Cost of Owning a Machine (combined with TM-9.2)
- HO-9.2 Quiz--Machinery, Equipment and Buildings
- HO-9.3 Key to Quiz (HO-9.2)
- Missouri Farm Business Record Book
- FBMA sample analysis forms or enrollees' own individual FBMA analysis forms

TRENDS IN SELECTED
OPERATING COSTS PER TILLAGE ACRE
FOR 300-600 ACRE GRAIN FARMS
 (FBMA Missouri Averages)



Mchy. Costs represent Machinery Repairs and Machinery Depreciation.

COSTS OF OWNING A MACHINE

Cost of Machine _____ Years to Keep _____

I. Fixed (Ownership Costs):

1. Depreciation \$ _____

$$\frac{\text{original cost} - \text{salvage}}{\text{years life}} = \text{Depreciation}$$
2. Interest on investment \$ _____

$$\frac{\text{original cost}}{2} \times \text{Interest Rate}$$
3. Insurance, Taxes, Shelter \$ _____
4. Total Fixed Costs/Year (1 + 2 + 3) \$ _____

II. Variable (Operating Costs) (per acre, bale, etc.):

5. Repairs and Maintenance \$ _____/unit

(per hour repair and maintenance costs as % of list price)

Tractor	.00012
Tillage Equipment	.0006
Harvesting Equipment	.0003
Planting Equipment	.00075

Cost per hour ÷ units per hour = costs per unit

6. Tractor Use Charge \$ _____/unit

(omit if machine is self-propelled)

purchase price of tractor x .15 = _____

_____ ÷ hours per year = cost per hour

cost per hour ÷ units per hour = cost/unit

7. Fuel \$_____/unit

Average Consumption/Acre*

Plowing	2.50	Drilling	.50
Disc	.65	Planting	.44
Cultivating	.48	Combining	1.45
Mowing	.62	Corn Picking	1.53
Raking	.27		

*Multiply by .72 for diesel fuel.

____ fuel con. per acre x ____ costs per gal = costs per acre
costs per acre ÷ units per acre = costs per unit

8. Lubrication \$_____/unit

figure .15 of fuel costs

9. Supplies (as twine) \$_____/unit

10. Labor \$_____/unit

cost per hour ÷ units per hour = costs per unit

11. Total Variable Costs Per Unit (5 + 6 + 7 + 8 + 9 + 10) \$_____

12. Estimated Units Per Year x ____ Costs Per Unit = Total Variable
Cost Per Year \$_____

13. Total Cost Per Year (4 + 12) \$_____

14. Total Costs Per Unit (13 ÷ units/year) \$_____

QUIZ--MACHINERY, EQUIPMENT AND BUILDINGS

- ___ 1. Depreciation is an example of a
- a. fixed cost
 - b. variable cost
 - c. neither
 - d. both
- ___ 2. Principal payments are an example of a
- a. fixed cost
 - b. variable cost
 - c. neither
 - d. both
- ___ 3. Machinery costs, including fuel, have been increasing faster than most other inputs. True or False
- ___ 4. Fixed costs are those that remain about the same regardless of the amount of use. True or False
- ___ 5. Variable costs are calculated on a per unit basis rather than a per year basis. True or False
- ___ 6. Tax savings (expensing and depreciation) enable all farmers to justify the purchase of more machinery and/or buildings. True or False
- ___ 7. Feasibility (cash flow) is always positive if the profitability is positive. True or False
- ___ 8. Timeliness is an important consideration in comparing ownership versus custom hiring. True or False
- ___ 9. Frequently, a young farmer can own one machine and do some custom work in addition to the owned land and generate cash to pay for custom hiring another, more expensive job. True or False
- ___ 10. The two kinds of costs associated with ownership are:
- a. _____
 - b. _____

KEY TO QUIZ (HO-9.2)

1. a
2. c
3. True
4. True
5. True
6. False
7. False
8. True
9. True
10. a. fixed
b. variable

FARM BUSINESS MANAGEMENT ANALYSIS

Unit II: Analyzing the Farm Business

Lesson 10: Utilizing Farm Credit

A. Review

The previous lesson, Analyzing Machinery, Equipment and Building Costs, should be reviewed. List all conclusions reached at your last meeting. Possible conclusions may have included:

1. Individuals should analyze their present investment and costs per tillable acre and determine if these are "in line" with the returns.
2. Fixed and variable costs are both present in analysis of investments in machines and/or buildings.
3. It is more profitable to operate than not to operate as long as variable costs are covered in the short run.
4. Custom hiring is an alternative to ownership in many situations.
5. Tax consequences should be considered in an investment.
6. Feasibility (cash flow) of an investment needs to be considered.
- 7.

B. Objective

To learn how to evaluate credit needs of farmers, and how to compare lenders and costs of different types of credit.

C. Motivation

Explain to the group that only 40 years ago, labor accounted for 55 percent of all resources used in agriculture, land for 15 percent, and capital for 30 percent. By 1976, utilization of resources had changed to where labor contribution had dropped to 20 percent, land had increased to 20 percent, and capital had jumped to 60 percent. We are at a point where the wise use of credit is essential to success in the farm business. Practically no farmer can operate without substantial amounts of borrowed capital. Point out that the capital investment per person in agriculture is two to three times that of non-agriculture business. A new type of management is

required to manage the finances of the farm business.

Show TM-10.1 and discuss the 17-year trend for assets, liabilities and propriety equities (net worth). Note the upward trend in all areas from 1973-1981. Liabilities were up for two more years before they turned downward. Much discussion can be drawn from this chart, but the most important part for the lesson is the fact that credit is a very important part of the farming operation. The ability to obtain credit and use it profitably will be one of the most important management areas we deal with in the FBMA program

Administer the accompanying quiz, HO-10.1, as a motivating experience for enrollees.

D. Key Points

Key points that will be accomplished are as follows:

1. *How do I select a personal lender?*
2. *What are the three types of credit, and how can they be used as a benefit?*
3. *What are the costs of credit?*
4. *What is a security agreement, and how is it used?*
5. *How should I plan my credit needs?*

E. Introduction of Information

Begin the introduction of information by explaining to the enrollees that each key point in the lesson will be discussed separately, but that in reality all aspects of farm credit affect each other, and that relationships between types of lenders, credit structure, credit costs and needs are all tied together and are all important to understand.

1. *How do I select a personal lender?*

Lenders will be discussed from two viewpoints: factors in choosing a lender with which to do business, and types and characteristics of various lending agencies.

- a. Show TM-10.2 as you discuss with the group the various factors that should be considered in choosing a lending agency with which to do business.

- (1) Lending Policies of the Institution--Are the credit terms of the lender suitable to the needs of agricultural borrowers? Are repayment schedules fitted to the earnings of the operation? It is important to know what type of credit the agency offers. Some agencies only make short-term or intermediate-term loans, while some specialize in long-term loans. What is the lending limit of the agency? Lending agencies sometimes have a limit on various types of credit, and it is important to select a lender that can fulfill your needs.
- (2) Reasonable Terms--One of the most important factors in selecting a lender is the terms offered on various types of loans. Is the interest charge offered on agricultural loans competitive with other agencies? Is the lender flexible in setting up repayment schedules to fit the type of loan offered? What are the penalties for paying off early or late? What type of security does the lender require on loans? Does the lender offer a line of credit to borrowers who desire to set one up? These questions are all important ones to ask lenders with which you are considering doing business. The cost of using borrowed money is as important as any other expense, and you need to evaluate the cost of credit, just as you compare prices of various kinds of feed, seed, fertilizer, etc.
- (3) Financial Knowledge of Lender--A lender needs to be more than someone who simply shuffles paper. The lender must be able to help you evaluate your credit needs. It is critical that a lender be able to evaluate a financial statement. A good lender should also be able to spot problem signals in a borrower's cash flow and help stop problem situations before they become serious. Familiarity with the many financing options available and the ability to explain them to borrowers and make recommendations as to the individual situation are also important.
- (4) Permanence and Dependability--Most farmers will be using borrowed money, at least on a short-term basis, for as long as they are in business. Therefore, it is important to select a lending agency with a good reputation and a good track record in the community. It is also important to start with an agency that can service your credit needs as the business grows so that you do not have to change lenders every time your need for

credit changes. Establishing a credit rating and a good working relationship with a lender is a timely process, and it is important to select an agency that you can stay with for a long time.

- (5) Knowledge of Agriculture--Loaning money for agricultural use is different than loaning for other types of businesses, and a lender needs to understand the peculiarities of agriculture. A lender needs to be familiar with hogs and crops if loans in swine production or crop production are made. The ability to understand agricultural pricing and price cycles is needed, along with familiarity with forward contracting and use of the futures market in order to assist farmer borrowers in making credit decisions based on production budgets. Often lenders who are familiar with agriculture are most aware of the pitfalls of various alternatives that others have tried to use and failed.

- b. Give enrollees a copy of HO-10.3 to refer to as you discuss the types and characteristics of various lenders. Point out that these descriptions are generalized and that individual agencies often vary among themselves in the way that they do business.

2. *What are the three types of credit, and how can they be used as a benefit?*

Show TM-10.3 and discuss the three types of credit as listed on the transparency. Use the following summary of information in your discussion.

- a. Short-Term Credit--Short-term credit, along with equity capital, is generally used in financing annual operations. Examples of annual operating inputs are feed, seed, fuel, fertilizer, chemicals and medicine. These items are used up in the normal operation of the business, and once they are used, their identity is lost. Short-term operating loans are generally paid off in less than one year.

Short-term credit is offered by commercial banks, Farm Credit Services, Farmers Home Administrations, dealers/merchants and individuals.

- b. Intermediate-Term Credit--Intermediate-term credit is used in financing production assets that will be used in more than one production process or production period. The life of an

intermediate-term asset is 1-10 years. Examples of intermediate-term assets are breeding livestock and machinery. Intermediate-term credit is often used to supplement the agri-manager's supply of short-term credit and equity capital.

Sources of intermediate-term credit include individuals, commercial banks, Farmers Home Administration, Farm Credit Services, and dealers.

- c. **Long-Term Credit**--Long-term credit is used to finance investments in land, buildings, equipment and other fixed investments that can be used for 10 or more years. Young farmers just getting started in business generally need a larger amount of long-term credit than older, established farmers. As percentage of owner equity in the business increases, the need for long-term capital generally decreases.

Sources of long-term credit include individuals, Farm Credit Services, Farmers Home Administration, insurance companies, and commercial banks.

3. *What are the costs of credit?*

Costs of credit will be discussed in two parts: first, looking at loan terminology and types of loans, and second, looking at some specific examples of how the cost of credit is determined in some sample situations. (The interest cost in the examples may not be current with the time-frame in which you are teaching this unit. They are used for ease of figuring. You may want to substitute current interest rates as you work through the samples.)

- a. **Loan Terminology and Types of Loans**--Give enrollees a copy of HO-10.4 and discuss each term or loan concept with them. Have them relate experiences that they may have had with various types of loans in the past. Work through the examples presented in the handout, and work through similar examples brought up by the enrollees.
- b. Give enrollees a copy of HO-10.5 and have them work through example 1 on their own. When they have finished, go over the problem together and discuss any questions the enrollees may have. Follow through in the same manner with the rest of the examples. These example situations attempt to highlight credit decisions that often need to be made. It is also important that enrollees have a good understanding of how interest is figured in different ways and know that they can

determine the cost of the credit they are using.

Following are the solutions to the sample situations to use in your discussion.

Situation 1: What we really have here is a decreasing payment amortized loan. The cost of credit is determined as follows:

<u>Year</u>	<u>Beginning Principal</u>	<u>Principal Payment</u>	<u>Interest Payment</u>	<u>Total Payment</u>
1	\$20,000	\$ 4,000	\$3,000	\$ 7,000
2	16,000	4,000	2,400	6,400
3	12,000	4,000	1,800	5,800
4	8,000	4,000	1,200	5,200
5	4,000	4,000	600	4,600
		\$20,000	\$9,000	\$29,000

The total cost of credit would be \$9,000.

Figure the true APR as follows using the true interest formula:

$$[(2 \times \# \text{ of payments per year}) \times \text{total interest paid}] \div [\text{total principal} \times \# \text{ of payments} + 1].$$

$$\frac{2 \times 1 \times 9000}{\$20,000 \times (5 + 1)} = \frac{18,000}{120,000} = 15\% = \text{true APR}$$

Situation 2: To figure the cost of credit:

$$\$20,000 \times 12\% = \$2,400 \times 5 \text{ years} = \$12,000 \text{ total cost of credit}$$

The annual payment on the loan would be:

$$\frac{\$20,000 \text{ principal} + \$12,000 \text{ interest added on}}{5 \text{ years}} = \$6,400 \text{ annual payment}$$

To figure the true APR in the loan:

$$\frac{2 \times 1 \times 12,000}{\$20,000 \times (5 + 1)} = \frac{24,000}{120,000} = .20 \text{ or } 20\%$$

Situation 3: To figure total cost of credit on this loan:

<u>Year</u>	<u>Beginning Principal</u>	<u>Principal Payment</u>	<u>Interest Payment</u>	<u>Total Payment</u>
1	\$20,000	\$ 4,000	\$ 2,800	\$ 6,800
2	16,000	4,000	2,240	6,240
3	12,000	4,000	1,680	5,680
4	8,000	4,000	1,120	5,120
5	4,000	4,000	560	4,560
		\$20,000	\$8,400	\$28,400

\$8,400 interest + \$300 credit life + \$250 service fee = \$8,950
total cost of credit

To figure the true APR:

$$\frac{2 \times 1 \times 8,950}{\$20,000 \times (5 + 1)} = \frac{17,900}{120,000} = .149 \text{ or } 14.9\%$$

Situation 4: To figure the cost of credit in option one:

\$14,000 borrowed from May 15 through September 30 (138 days) at 14% simple interest = \$14,000 x 14% = \$1,960 ÷ 365 days = \$5.37/day x 138 = \$741.04

\$10,000 borrowed from June 30 through September 30 (92 days) at 14% simple interest = \$10,000 x 14% = \$1,400 ÷ 365 days = \$3.835/day x 92 = \$352.88

\$741.04 + \$352.88 = \$1,093.92 cost of credit in option one

To figure the cost of credit in option two:

\$12,000 borrowed from May 15 through September 30 (138 days) plus a 5% stock requirement or \$12,000/.95 = \$12,631.58 total at 14½% interest = \$12,631.58 x .145 = \$1,831.58 ÷ 365 = \$5.018/day x 138 days = \$692.48

\$1,000 borrowed from May 31 through September 30 (123 days) plus a 5% stock requirement or \$1,000/.95 = \$1,052.63 total at 14½% interest = \$1,052.63 x .145 = \$152.63 ÷ 365 = \$.418/day x 123 days = \$51.43

\$2,000 borrowed from June 30 through September 30 (93 days) plus a 5% stock requirement or $\$2,000/.95 = \$2,105.26$ total at $14\frac{1}{2}\%$ interest = $\$2,105.26 \times .145 = \$305.26 \div 365 = \$.836/\text{day}$ x 93 days = \$77.78

\$3,000 borrowed from July 31 through September 30 (62 days) plus a 5% stock requirement or $\$3,000/.95 = \$3,157.89$ total at $14\frac{1}{2}\%$ interest = $\$3,157.89 \times .145 = \$457.89 \div 365 = \$1.255/\text{day}$ x 62 days = \$77.78

\$4,000 borrowed from August 31 through September 30 (31 days) plus a 5% stock requirement or $\$4,000/.95 = \$4,210.53$ total at $14\frac{1}{2}\%$ interest = $\$4,210.53 \times .145 = \$610.53 \div 365 = \$1.673/\text{day}$ x 31 days = \$51.85

$\$692.48 + \$51.43 + \$77.78 + \$77.78 + \$51.85 = \$951.32$

Naturally, you would select option two over option one in this case because the total cost of credit is less. It should be pointed out that one of the main advantages of a line of credit is that it is easy to borrow from and repay, and therefore a farmer is more likely to keep the credit balance as low as possible and make the best use of borrowed money.

Situation 5: To figure your annual payment:

220 acres x \$875/acre = \$192,500 total farm price

$\$192,500 \times .20 = \$38,500$ down payment, leaving a loan balance of $\$192,500 - \$38,500 = \$154,000$

The amortization factor from the table for 25 years at 14% is .1454

Annual payment = $\$154,000 \times .1454 = \$22,391.60$

Interest first year = $\$154,000 \times .14 = \$21,560$

This example highlights the fact that with equal payment amortized loans, interest makes up a large percentage of the payments during early years of the loan.

Situation 6: To figure the true APR:

$2\%/\text{month} \times 12 \text{ mos./yr.} = 24\%$ simple interest

4. What is a security agreement, and how is it used?

- a. Distribute samples of note-security agreements and financing statements, available through most banks. Have the enrollees look over the agreements and discuss when and why security agreements are necessary. The following points will aid in your discussion.

- (1) Most loans require some type of security agreement. The lender or creditor's first obligation is to the success of the business or to the people whose money is being lent. Creditors want to do all they can to keep loans safe for both themselves and the borrower. A security agreement protects the lender in two ways. By accepting collateral or "pledged assets" as part of the security agreement, the lender has something of value to use to recover the loan if the borrower does not repay the money borrowed. In addition, with a properly filed financing statement, other creditors are prevented from seizing the collateral.
- (2) On operating capital loans on which a lien on collateral is taken, a security agreement is drawn up, including a listing of specific collateral that will be used to secure the loan.

Collateral includes such assets as land, machinery, livestock, or stocks and bonds. A financing statement is then filed with the recorder of deeds to put the public on notice of the lien on collateral. The borrower may not sell or dispose of any secured items without permission from the lender until the loan has been satisfied. When the loan is paid off, the security agreement is abolished, and the borrower may use the collateral involved.

In the case of crops, lenders are required to take a new security agreement each year to perfect the lien on a new crop.

- (3) On real estate loans, a "Deed of Trust" is recorded with the recorder of deeds. The deed of trust on a real estate loan serves basically the same function as a financing statement does on operating loans. This deed of trust or mortgage serves as security for the loan.

5. *How should I plan my credit needs?*

- a. Cash flow planning is the key to planning credit needs for the next month, year, or several years. Refer to the Sample Entries for the Missouri Farm Business Record Book (Answer Key) (Forms 27 and 28). As enrollees follow along, show how a lender and a borrower could use this sample completed cash flow to plan credit needs for the year. Use the following points to help in your discussion.
- (1) In evaluating a cash flow plan such as this, the figures the lender is interested in will be on Form 27 line 31 (Money Borrowed) and line 64 (Payments on Borrowed Funds) for each month. As a lender looks at this sample cash flow, months in which money will be needed will be identified, and months in which money can be repaid will be identified. The credit at the beginning of the year is \$20,840.
 - (2) In the sample farm we can see that the farmer needed to borrow in January and February to meet the cash flow needs. We also see that the major payments for the year were made in the months of August and December. Many farmers will have more action in the borrowing and repayment areas.
 - (3) Ask the class to look at the Cash Balance (line L), and ask if they have any ideas to help improve the net income for the year.
 - (4) Point out the fact that maintaining a high cash balance costs. For instance, the excess cash could be invested in the short term to make a profit, or it could be used to reduce borrowed funds and lower interest costs. Both actions result in a profit.
 - (5) The lender, after seeing when and how much money will be needed during the year, will probably want to visit about the budgets used to get the figures for the plan. The lender will try to get a handle on how conservative you have been with your estimated figures and how realistic and workable your cash flow plan is.

F. Discussion

Some time should be set aside for enrollees to discuss any credit problems not already talked about or illustrated. This might be a good time to again point out and discuss the fact that farmers use much more credit than most other people, and that to be comfortable in farming, you need to become comfortable with using credit.

Give enrollees copies of HO-10.6 and let them couple complete the handout and grade themselves. If you are short of time, suggest that they take the handouts home and work through them there.

G. Conclusions

Conclusions that may be reached include:

1. Credit used as a percentage of the total resources used in agriculture has doubled in the last 40 years.
2. A lending agency needs to be chosen carefully, considering such factors as dependability and permanence, ability to service needs now and in the future, ease of doing business, and cost of the credit offered.
3. Interest can be expressed in various ways, and it is important to know how to figure the true cost of credit.
4. A borrower should always know what the true APR is on any loan made.
5. Security agreements are made on most loans to protect both the lender and the borrower.
6. Cash flow planning is the key to determining credit needs.
- 7.

Announcements

The next meeting will be held in the fall. The topics for next year's meetings will center around farm planning and making adjustments in the farm business.

Social

Individual Instruction

When meeting with enrollees following this lesson, spend time looking at their individual credit situations. Explore any changes in their credit management that could be made to make more effective use of their borrowed capital. Are they happy with their lender? Should they explore developing a "line of credit" for short-term financing? Are they operating with too much borrowed capital or not enough? Are they paying too much for their credit? Has their cash flow planning been effective? Go over questions like with the enrollees and help them to think through their credit situation.

Materials Needed

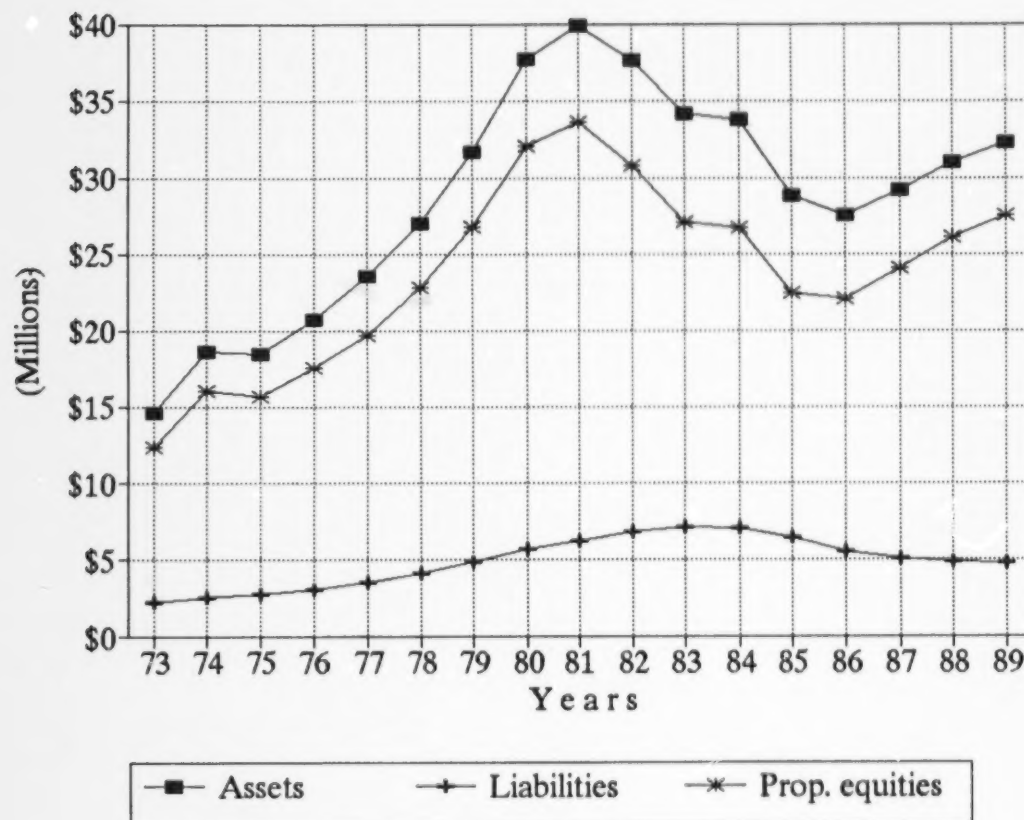
Instructor

TM-10.1 Balance Sheet of the Farming Sector
TM-10.2 Factors in Selecting a Lender
TM-10.3 Three Classifications of Credit
Sample Entries For the Missouri Farm Business Record Book
(Answer Key)

Student

HO-10.1 Quiz--Credit
HO-10.2 Key to Quiz (HO-10.1)
HO-10.3 Lending Institutions in Agriculture
HO-10.4 Loan Terminology and Types of Loans
HO-10.5 Sample Situations--Farm Credit
HO-10.6 Rate Yourself as a Credit Risk
HO-10.7 Key to Rate Yourself as a Credit Risk (HO-10.5)
Sample Entries For The Missouri Farm Business Record Book
(Answer Key)

Balance Sheet/Missouri Farming Sector 17 Year Trend



Source: Missouri Farm Facts, Missouri Agricultural Statistics Service, 1992.

FACTORS IN SELECTING A LENDER

1. Lending policies of the institution
2. Reasonable terms
3. Financial knowledge of lender
4. Permanence and dependability
5. Knowledge of agriculture

THREE CLASSIFICATIONS OF CREDIT

SHORT-TERM

- Used to finance annual operating inputs
- Less than one year
- Sources: Banks, FCS, FHA, dealers/merchants and individuals

INTERMEDIATE-TERM

- Used to finance production assets with a 1-10 year life
- Sources: Individuals, Banks, FCS, FHA and dealers

LONG-TERM

- Used to finance land, buildings, equipment and other fixed capital with a life of over 10 years
- Sources: Individuals, FCS, FHA, Insurance Companies and Commercial Banks

QUIZ--CREDIT

- ___ 1. It is profitable for a farmer to borrow money to expand the farm business when the borrowed money:
- a. returns more than the cost of borrowing money.
 - b. can be secured at a low interest rate.
 - c. can improve the level of production.
 - d. will increase volume of business.
- ___ 2. Forms that should be completed prior to obtaining credit are:
- a. Forms 13/14 & 15/16--Depreciation Schedules.
 - b. Forms 27 & 28--Cash Flows.
 - c. Form 11--Enterprise Expenditures
 - d. Forms 17/18--Inventories.
- ___ 3. A farmer that borrows \$1,000 and repays it with 12 monthly payments of \$90 would have an interest cost of:
- a. 14.8%
 - b. 8.0%
 - c. 11.2%
 - d. 9.8%
- ___ 4. Leverage:
- a. is use of borrowed funds with your own.
 - b. raises rate of return if profitable.
 - c. results in larger loss if not profitable.
 - d. all of the above.
- ___ 5. A young farmer with 50 percent equity would have a/an:
- a. asset:liability ratio of 2:1.
 - b. debt:net worth ratio of 1:1.
 - c. dollar borrowed for each of the farmer's dollars.
 - d. all of the above.

- ___ 6. A farmer with assets of \$100,000 and a debt:worth ratio of 1:1 would have liabilities of:
- a. \$50,000
 - b. \$100,000
 - c. \$25,000
 - d. all of the above
- ___ 7. About 60 percent of the credit to buy farmland is furnished by:
- a. Farm Credit Services (FCS).
 - b. Individuals.
 - c. Farmers Home Administration (FHA).
 - d. all of the above.
- ___ 8. Dealer credit is often:
- a. zero interest on open accounts for 30 days.
 - b. higher than that charged by banks or FCS.
 - c. combined with credit insurance and/or life insurance.
 - d. all of the above.
- ___ 9. A note and security agreement are the same thing. True or False
- ___ 10. In an ideal situation, a farmer applying for a loan would take the following three prepared forms or statements with him.
- a. _____
 - b. _____
 - c. _____

KEY TO QUIZ (HO-10.1)

1. a
2. b
3. a
 - .148 = $\frac{2 \times 12 \times 80}{1000 \times 13}$
4. d
5. d
6. a
7. b
8. d
9. False
10.
 - a. Financial Statement--Form 25
 - b. Profit and Loss Statement--Form 29
 - c. Cash Flow Estimate--Form 27 and Form 28

LENDING INSTITUTIONS IN AGRICULTURE

1. *Commercial Banks.* Banks are a big source of funds for all types of loans, including real estate, machinery, operating and family expenditure loans.

Repayment time: Up to 1½ years on operating and other short-term loans, usually 1 year or less; two to seven years on intermediate loans, including large machinery and improvement loans; and up to 20 years on real estate, but more generally 10 to 15 years. Bank loans are usually renewed each 6 months, and the interest rate is adjusted to a current level.

How much you can borrow: Most loan applications are evaluated on the ability to repay, purpose of the loan, and the financial position of the borrower.

2. *Farm Credit Services Associations.* FCSs make only loans secured by real estate. The money from the loan, however, may be used to purchase land, refinance existing mortgages, build and repair buildings, buy machinery and livestock, pay operating expenses, or for other purposes.

Repayment time: 50 to 40 years. Any or all of the loan can be repaid at any time without penalty. Prepayments can also be built up to meet later payments when they come due.

FCSs in some areas are beginning to make loans where you pay interest only for up to 10 years. Then, the entire loan comes due at the end of 10 years.

How much you can borrow: Loans are made on up to 85% of the appraised normal value of the farm real estate used for security, plus 5% that is used to purchase stock in the association. The normal agricultural value varies according to the earning power of the farm, location, availability of off-farm employment, and other related factors. Dividends may be paid on the stock owned by the member borrowers.

3. *Production Credit Associations.* PCAs make short-term loans for such items as seed, feed, fertilizer, family living expenses, hospital bills, or most any other farm operating or family living expense.

They make intermediate-term loans for capital purchases, including tractors, combines, equipment, livestock, improving land and buildings, large feed installations, automobiles, trucks, and other family living and farm business expenses.

Total farm budgeted loans are available, where the borrower receives money when it is needed and pays interest only on the outstanding balance.

Repayment time: Short-term loans are due usually in 1 year. Intermediate loans may be repaid over a 7-year period.

How much you can borrow: Most loans are evaluated on your ability to repay the loan from sales of farm products, purpose of the loan and your financial position. Most PCAs can make large enough loans to accommodate large operations. Purchase of stock (equal to 5-10% of the loan) is a condition of the loan. Dividends may be paid on stock owned by member borrowers.

4. *Life Insurance Companies.* They make loans secured by farm real estate. The proceeds may be used to buy farm land, improve or construct buildings, or any other worthwhile farm project.

During our present period of tight money, usuary laws in some states and better alternative investments have caused a large reduction in insurance company farm mortgage funds.

In the St. Louis Farm Credit District, the life insurance companies' share of the market dropped from 23% in the first half of 1968 to 15% in the first half of 1969. In the St. Paul district, the share dropped from 38% to 7%.

Don't forget--you may also have a life insurance policy with a cash surrender value that you can use as collateral for a loan, or you may borrow the amount directly from your life insurance company. The proceeds from a policy loan may be used as you wish.

Repayment time: These loans are generally repaid at 5 to 25 years, but some are for up to 40 years. Some insurance companies restrict prepayments to 20% of original loans during any one year. If more than 20% is paid in one year, a penalty is assessed.

Some permit large prepayment if all prepayment is derived from farm income. Various payment plans are also offered, such as perpetual or balloon type and participation loans.

How much you can borrow: Up to 50-75% of the appraised value of the farm and improvements offered as security.

5. *Farmers Home Administration.* You must be unable to obtain adequate credit from other lenders to be eligible for FHA loans.

FHA has three credit programs available to farmers: farm operating, farm ownership, and emergency credit programs. Operating loans are made for purchase of livestock, seed, feed, and other current operating needs.

Ownership loans are made to enable farmers to enlarge, develop, and buy farms. Emergency loans are made to farmers in counties that have been officially declared as disaster counties. The interest rates on FHA loans are generally lower than those charged by other lending agencies.

Repayment time: Operating loans have maturities up to 7 years. Farm ownership and soil and water loans extend up to 40 years.

How much you can borrow: FHA can loan a higher percentage on security than other lenders. Farm ownership loans can be made up to 100% of the amount of the full, fair and reasonable value of the property as determined by the local county committee. The maximum amount of operating loans and farm ownership loans is limited by law.

6. *Small Business Administration.* The Small Business Administration (SBA) loan activity in agriculture has previously been aimed primarily toward agriculturally related businesses instead of production agriculture. In recent years, however, the SBA has furnished loans to farmers in disaster situations at lower rates of interest than could be obtained from other lenders.

7. *Commodity Credit Corporation.* CCC is not a lending agency, but it can provide a source of money and credit for program participants. CCC loans on stored crops produced under commodity programs are available.

With the commodity as collateral, the corporation makes nonrecourse loans to farmers on warehouse- or elevator-stored and on-farm-stored wheat and feed grains. The amount of the loan is 90% of the amount certified by producers or 100% of the amount if it is certified by ASCS or warehouse receipts.

Interest rates are reviewed by the corporation every six months.

8. *Rural Credit Unions.* Most loans are for production purposes, such as seed, fertilizer, and machinery, but they can be for any worthwhile purpose. They have flexible lending programs and rates. The maximum legal rate is 1% per month on unpaid balance.

How much you can borrow: The amount borrowed depends on repayment ability. Each union has its own policy.

Where to apply: Some sponsoring organizations include cooperatives, farm organizations, rural churches and other rural groups.

9. *Dealer Credit.* Most farm machinery, equipment, feed and fertilizer may be financed through dealers. Loans through dealers may increase your total borrowing capacity, but be sure to consider any such purchases in your overall financing program and check the interest rates. Rates may be considerably higher than those charged by regular lenders.

Dealer credit also includes short-term credit (generally under 30 days) on open accounts at no interest for operating purchases. It is customary, however, for dealers and merchants to charge an interest fee when an unpaid account goes overdue. This interest fee may or may not be higher than the rates of other lending institutions.

10. *Individuals.* Some 60% of the farmland sold today is financed by the seller. Often lower down payments and lower interest rates are available under a sales contract.

In this type of financing, even though a borrower may be working with relatives, it is important to keep it on a legal basis by using contracts, notes and other guarantees, just as they would be used in institutional financing.

LOAN TERMINOLOGY AND TYPES OF LOANS

Cost of Credit--The money cost of borrowed capital is determined by the difference between dollars actually available to be spent for production or investment purposes and the total money paid to retire the loan. In addition to actual interest, the money cost of borrowed capital may include service charges, loan closing fees, carrying charges, fees for credit reports and appraisal fees. Any non-interest costs that are included as a condition of the loan should be included in the annual percentage rate (APR) quoted by the lender. An example of this would be a loan of \$1,000 for a year at 14 percent simple interest plus a \$25 service charge. The cost of this loan would be \$140 plus the \$25 service charge, making an APR of 16.5%.

Prime Rate--The prime rate is defined to be the lowest interest rate being charged at any point in time by commercial banks for short-term loans. The prime interest rate being quoted on the nationwide money market, however, may be quite a lot higher than the interest on agricultural loans from various local agriculture lending sources. Each local lender also has a "prime rate," which is the rate being charged to lowest-risk borrowers for their credit.

APR (Annual Percentage Rate)--According to the Truth in Lending legislation passed by the U.S. Congress, lenders must inform borrowers of (a) the total finance charge on a loan and (b) the annual interest rate based upon compound interest tables. This is known as full disclosure of total finance costs in terms of annual percentage rate (APR). All lenders must inform borrowers of the APR of any loan they are processing with a written statement required under truth in lending provisions. Remember that APR includes the interest rate being charged plus any other costs associated with the loan.

Simple Interest Loan--A simple interest loan is one in which the interest is paid only on the unpaid loan balance. Interest is computed by multiplying the loan balance outstanding by the contractual interest rate, and interest is only paid for the time the money is borrowed. Technically, simple interest refers to a single payment loan. Principal and interest are paid when the note comes due or at a prior date. Simple interest loans are generally made for a year or less.

The formula for figuring interest cost on simple interest loans is as follows:

$$\text{Interest Cost} = \text{Principal} \times \text{Interest Rate} \times \text{Time (Years)}$$

Example: \$2,000 at 15% for 6 months

$$\$2,000 \times .15 \times 6/12 = \$150$$

The formula for figuring interest rate on simple interest loans is as follows:

$$\text{Simple Interest Rate} = \frac{\text{Dollar Cost of Credit}}{\text{Principal} \times \text{Time}}$$

Example: \$2,000 used for one year with an interest charge of \$300.

$$\frac{\$300}{\$2,000 \times 1} = .15 \text{ or } 15\% \text{ per year}$$

Add-On Interest Loans--Under this method, interest is figured on the full face value of the loan for the entire loan period. Interest is computed on the loan amount for the full term at the time the loan is made and then "added on." This amount (principal plus interest) is then divided equally by the number of payments to be made. The borrower is paying interest on the full original value of the note and only has use of part of the initial balance once principal payments are started. This loan is sometimes referred to as the "flat rate" loan.

The formula for estimating the APR interest rate on an add-on loan is as follows:

$$(\text{APR}) \text{ Annual Interest Rate} = \frac{2 \times \text{No. of Payments/Yr.} \times \text{\$ Cost of Credit}}{\text{Amount Borrowed} \times (\text{Total No. of Payments} + 1)} \quad \begin{matrix} (\text{interest} = \text{charges}) \\ (\text{initially}) \end{matrix}$$

Example: \$1,000 loan for 4 years with 15 percent add-on interest with semi-annual payments. $\$1,000 \times 15\% = \$150 \times 4 \text{ yrs.} = \$600$ interest added on.

$$(\text{APR}) \text{ Annual Interest Rate} = \frac{2 \times 2 \times \$600}{\$1,000 \times (8 + 1)} = \frac{2,400}{9,000} = .267 \text{ or } 26.7\%$$

Discount or Front-End Loans--In a discounted loan, the interest is taken out first; in other words, the interest and any other loan charges are calculated and then subtracted from the principal. As an example, a \$3,000 loan at 15 percent interest for one year would result in the borrower only receiving \$2,550 to use when the loan is made, and the \$3,000 debt would be paid back by the end of the year as specified. Use the same formula for estimating the true APR on a discounted loan as you would for an add-on loan.

Example: \$1,000 loan for 1 year at 15 percent interest discounted with 1 payment at the end of the year. $\$1,000 \times 15\% = \$150 \times 1 \text{ yr.} = \$150$ total interest paid. $\$1,000 - \$150 = \$850$ actual credit obtained.

$$(\text{APR}) \text{ Annual Interest Rate} = \frac{2 \times 1 \times \$150}{\$850 \times (1 + 1)} = \frac{300}{1,700} = .176 \text{ or } 17.6\%$$

Balloon Loan--A balloon-type loan requires only interest payments each period until the final payment where all of the principal is due at once. In some cases, a principal payment is made each time the interest payment is made, but the principal payments do not pay off the entire loan, and a large portion of the principal is due at the loan maturity date. Balloon loans are commonly used when the purchased assets do not create enough cash flow to pay on principal for some time.

Example: A \$10,000 loan for 3 years to buy 25 beef heifers at 14 percent simple interest with principal paid in one balloon payment at the end of the 3 years.

$$\$10,000 \times 14\% = \$1,400 \text{ interest each year}$$

<u>Year</u>	<u>Payment</u>
1	\$1,400 interest
2	\$1,400 interest
3	\$1,400 interest
4	\$1,400 interest and \$10,000 principal

Amortized Loans--The amortized loan is a partial payment plan where part of the principal plus interest on the unpaid loan balance is repaid each year. There are two main types of amortization plans: (a) the decreasing payment plan and (b) the equal payment plan.

Under the decreasing payment plan, the loan is repaid in equal principal payments, and each payment period, the interest is figured on only the remaining loan balance. This type of loan can be a hardship to young borrowers because of the large debt service requirement during the early years of the loan.

With the equal payment plan, there is a flat payment each period, but the proportion of the payment that is principal and interest varies over the term of the loan. The early payments made on the loan will include a large percentage of the interest payment, and the later payments will include a greater share of the principal. Use amortization tables to compute the payments on an equal payment loan.

Example: Amortized loan decreasing payment plan. \$15,000 for 10 years at 15 percent interest.

HO-10.4 (cont'd.)

<u>Year</u>	<u>Unpaid Principal</u>	<u>Principal¹ Payment</u>	<u>Interest²</u>	<u>Total Payment</u>	<u>Remaining Balance</u>
1	15,000	1,500	2,250	3,750	13,500
2	13,500	1,500	2,025	3,525	12,000
3	12,000	1,500	1,800	3,300	10,500
4	10,500	1,500	1,575	3,075	9,000
5	9,000	1,500	1,350	2,850	7,500
6	7,500	1,500	1,125	2,625	6,000
7	6,000	1,500	900	2,400	4,500
8	4,500	1,500	675	2,175	3,000
9	3,000	1,500	450	1,950	1,500
10	1,500	1,500	225	1,725	0
Total	0	15,000	12,375	27,375	

$$\text{Principal payment/year} = \frac{\text{total principal}}{\text{no. of years}}$$

Interest payment = unpaid principal at the beginning of the year x the interest rate

Example: Amortized loan--equal payment plan. \$15,000 for 10 years at 15 percent interest.

<u>Year</u>	<u>Principal & Interest¹ Payment</u>
1	\$ 2,988
2	2,988
↓	↓
10	2,989
Total	\$29,888

¹The principal and interest payment is determined by finding the factor from the amortization table on pages 10.34-10.35 (in this case, .1992) and multiplying it by the amount of the loan (in this case, \$15,000) (\$15,000 x .1992 = \$2,988).

Compensating Balances--In some cases, a borrower may be required to keep a certain proportion of a loan in a savings or checking account. This is often referred to as a compensating balance, and the money contained therein is unavailable for use. The true APR will be greater than the quoted rate.

Production Credit Associations, Farm Credit Services and Banks for Cooperatives have something similar to compensating balances. PCAs and FCSs require the borrower to purchase stock in the association in proportion to the amount borrowed. The banks for cooperatives require stock purchases based on the interest on the loan. The money to purchase the stocks is included in the loans but is not available for use by the borrower. However, the borrower may receive dividends on the stock purchase or compensating balance.

Example: Loan with stock purchase requirement. Assume an \$8,000, 2-year loan that is to be repaid in two equal annual payments on the principal at the end of each year with a contractual interest rate of 13 percent, with a 5 percent stock purchase requirement. In order to get the loan, the person would have to borrow $\$8,000/.95$ or \$8,421 to cover the 5 percent stock requirement. Each annual principal payment will be $\$8,421/2$, or \$4,210.50. The interest payment each year would then be:

Year 1--\$8,421.00 x .13 =	\$1,094.73
Year 2--\$4,210.50 x .13 =	547.37
	<u>\$1,642.10 total interest paid</u>

The Annual Interest Rate could be calculated by using the same formula presented earlier for figuring add-on interest:

$$\frac{2 \times 1 \times 1,642.10}{8,000 \times (2 + 1)} = \frac{3,284.10}{24,000} = .1368 \text{ actual interest rate}$$

A quick approximation of the actual annual interest may be made as follows:

Annual interest rate = contractual rate x (1 + stock requirement)

In this example, it would be:

$$\text{Annual interest rate} = .13 \times (1 + .05) = .1365$$

Interest After Taxes--It is important to remember that interest paid is a tax deductible expense. When figuring the cost of borrowing, the farmer's tax rate should be considered. As an example, the after-tax interest rate for a farmer in the 30 percent tax bracket would only be 10.5 percent on a loan at 15 percent interest.

$$\begin{aligned} 15\% \text{ interest} \times 30\% \text{ tax bracket} &= .045 \\ 15\% - 4.5\% &= 10.5\% \end{aligned}$$

It is also important to note that in times of inflation, the interest paid or received on money may be diminished or even covered by the effect of the inflation. As an example, if you borrow \$1,000 at 14 percent simple interest for a year when there is 10 percent inflation, you will owe \$1,140 at the end of the year. However, because the dollars you repay with are worth 10 percent less than the dollars you borrowed because of inflation, you are really only paying back \$1,026 ($10\% \times \$1,140 = \$114$, $\$1,140 - \$114 = \$1,026$). This simply means that you are repaying borrowed money with dollars that are worth less because of inflation.

Line-of-Credit--Some lenders offer line-of-credit financing. There are various versions of line-of-credit financing. The two most common approaches are (a) the level line of credit and (b) the sinking line of credit.

With a level line of credit, a borrower can borrow, pay off part or all of the debt, and then borrow again. The line is replenishing. The borrower does not have to apply for a new loan each time money is needed. The credit line is drawn upon (up to a ceiling amount) as cash is needed, and payments are made as income is available. This is sometimes referred to as revolving credit. Many banks and PCAs offer this option with short-term credit. One big advantage of a borrower operating on a line of credit is that borrowing and repaying are easy and quick to do, and a farmer is more likely to keep excess unused funds low, thus keeping a higher percentage of money in use. Another advantage of a line of credit is that you have money available to use for making a purchase when you do not have time to talk to your lender. To establish a level line of credit, a borrower generally sits down with the lender at least once per year, and together they evaluate the financial position of the borrower and set a comfortable upper limit as a ceiling for the line of credit.

A sinking line of credit is similar in that the borrower and lender meet in advance and establish a ceiling or limit that the borrower can draw upon at a selected time. The difference is that the line is not replenishing. The main advantage here is that the borrower can get a commitment on the amount available.

Cash flow planning is a must for anyone acquiring line-of-credit financing. Line-of-credit financing forces the borrower to look ahead.

Leverage--Using someone else's money along with your own gives you leverage. If a farmer can earn a net profit on borrowed capital, it stands to reason that a higher return is being earned on personal capital.

As an example, assume that you are able to get a return on an investment of 20 percent per year. You have \$20,000 equity capital of your own to invest. This \$20,000 investment would yield a return of \$4,000 for the year. However, if you could borrow an additional \$20,000 to invest at 15 percent interest, you could gain a 5 percent return of \$1,000 which, when added to the \$4,000 return on equity capital, would yield a total return of 25 percent per year on your original investment. On the other hand, if things went sour and the investment returned only 12 percent, the resulting loss would be larger than if you used only your own money.

When the economy is good, particularly in times of inflation, it pays to be highly leveraged (large percent borrowed capital as compared to equity capital); however, when the economy is in recession, those who are highly leveraged suffer first.

Annual Payment per \$1 of Loan at Given Interest Rates and Maturities
(Amortization Table)

Year	4%	5%	6%	7%	8%	9%	10%	11%	12%
1	1.0400	1.0500	1.0600	1.0700	1.0800	1.0900	1.1000	1.1100	1.1200
2	0.5301	0.5378	0.5454	0.5530	0.5607	0.5684	0.5761	0.5839	0.5916
3	0.3603	0.3672	0.3741	0.3810	0.3880	0.3950	0.4021	0.4092	0.4163
4	0.2754	0.2820	0.2885	0.2952	0.3019	0.3086	0.3154	0.3223	0.3292
5	0.2246	0.2309	0.2373	0.2438	0.2504	0.2570	0.2637	0.2705	0.2774
6	0.1907	0.1970	0.2033	0.2097	0.2163	0.2229	0.2296	0.2363	0.2432
7	0.1666	0.1728	0.1791	0.1855	0.1920	0.1986	0.2054	0.2122	0.2191
8	0.1485	0.1547	0.1610	0.1674	0.1740	0.1806	0.1874	0.1943	0.2013
9	0.1344	0.1406	0.1470	0.1534	0.1600	0.1667	0.1736	0.1806	0.1876
10	0.1232	0.1295	0.1358	0.1423	0.1490	0.1558	0.1627	0.1698	0.1769
11	0.1141	0.1203	0.1267	0.1333	0.1400	0.1469	0.1539	0.1611	0.1684
12	0.1065	0.1128	0.1192	0.1259	0.1326	0.1396	0.1467	0.1540	0.1614
13	0.1001	0.1064	0.1129	0.1196	0.1265	0.1335	0.1407	0.1481	0.1556
14	0.0946	0.1010	0.1075	0.1143	0.1212	0.1284	0.1357	0.1432	0.1508
15	0.0899	0.0963	0.1029	0.1097	0.1168	0.1240	0.1314	0.1390	0.1468
16	0.0858	0.0922	0.0989	0.1058	0.1129	0.1203	0.1278	0.1355	0.1433
17	0.0821	0.0886	0.0954	0.1024	0.1096	0.1170	0.1246	0.1324	0.1404
18	0.0789	0.0855	0.0923	0.0994	0.1067	0.1142	0.1219	0.1298	0.1379
19	0.0761	0.0827	0.0896	0.0967	0.1041	0.1117	0.1195	0.1275	0.1357
20	0.0735	0.0802	0.0871	0.0943	0.1018	0.1095	0.1174	0.1255	0.1338
25	0.0640	0.0709	0.0782	0.0858	0.0936	0.1018	0.1101	0.1187	0.1275
30	0.0578	0.0650	0.0726	0.0805	0.0888	0.0973	0.1060	0.1150	0.1241
35	0.0535	0.0610	0.0689	0.0772	0.0858	0.0946	0.1036	0.1129	0.1223
40	0.0505	0.0505	0.0664	0.0750	0.0838	0.0929	0.1022	0.1117	0.1213

HO-10.4 (cont'd.)

Amortization Table (cont'd.)

Yr.	13%	14%	15%	16%	17%	18%	19%	20%
1	1.1300	1.1400	1.1500	1.1600	1.1700	1.1800	1.1900	1.2000
2	0.5994	0.6072	0.6151	0.6229	0.6308	0.6387	0.6466	0.6545
3	0.4235	0.4307	0.4379	0.4452	0.4525	0.4599	0.4673	0.4747
4	0.3361	0.3432	0.3502	0.3573	0.3645	0.3717	0.3789	0.3862
5	0.2843	0.2912	0.2983	0.3054	0.3125	0.3197	0.3270	0.3343
6	0.2501	0.2571	0.2642	0.2713	0.2786	0.2859	0.2932	0.3007
7	0.2261	0.2331	0.2403	0.2476	0.2549	0.2623	0.2698	0.2774
8	0.2083	0.2155	0.2228	0.2302	0.2376	0.2452	0.2528	0.2606
9	0.1948	0.2021	0.2095	0.2170	0.2246	0.2323	0.2401	0.2480
10	0.1842	0.1917	0.1992	0.2069	0.2146	0.2225	0.2304	0.2385
11	0.1758	0.1833	0.1910	0.1988	0.2067	0.2147	0.2228	0.2311
12	0.1689	0.1766	0.1844	0.1924	0.2004	0.2086	0.2168	0.2252
13	0.1633	0.1711	0.1791	0.1871	0.1953	0.2036	0.2121	0.2206
14	0.1586	0.1666	0.1746	0.1828	0.1912	0.1996	0.2082	0.2168
15	0.1547	0.1628	0.1710	0.1793	0.1878	0.1964	0.2050	0.2138
16	0.1514	0.1596	0.1679	0.1764	0.1850	0.1937	0.2025	0.2114
17	0.1486	0.1569	0.1653	0.1739	0.1826	0.1914	0.2004	0.2094
18	0.1462	0.1546	0.1631	0.1718	0.1807	0.1896	0.1986	0.2078
19	0.1441	0.1526	0.1613	0.1701	0.1790	0.1881	0.1972	0.2064
20	0.1423	0.1509	0.1597	0.1686	0.1776	0.1862	0.1960	0.2053
25	0.1364	0.1454	0.1546	0.1640	0.1734	0.1829	0.1924	0.2021
30	0.1334	0.1428	0.1523	0.1618	0.1715	0.1812	0.1910	0.2008
35	0.1318	0.1414	0.1511	0.1608	0.1707	0.1805	0.1904	0.2003
40	0.1309	0.1407	0.1505	0.1604	0.1703	0.1802	0.1901	0.2001

SAMPLE SITUATIONS--FARM CREDIT

1. You have decided to buy a tractor for \$20,000. You can get a loan at the bank for 15 percent simple interest for 5 years to be paid off in 5 equal annual principal payments. What will be the total cost of the credit offered here? What is the true APR on this loan?
2. The dealer offers to finance the same tractor for you at 12 percent interest using the "add-on" or "flat rate" method. The tractor will be paid for in 5 equal annual payments. How much will each annual payment be? What will be the total cost of the credit offered here? What is the true APR on this loan?
3. Another lending institution offers to finance the same tractor at 14 percent simple interest for 5 years as in number 1 above. They require the borrower to buy credit life insurance on the loan at a cost of \$300 and charge a loan service fee of \$250 at the time the loan is made. What is the total cost of credit on this loan? What would be the true APR on this loan?
4. You have run some budgets on feeding out 300 purchased feeder pigs and have decided that there is a good profit available. You figure that the pigs will cost about \$12,000 and that it will cost about \$15,000 for feed, veterinarian, and other variable costs. You have estimated the time schedule of the costs and returns as follows:

May 15--purchase pigs--\$12,000
 May 31--feed bill--\$1,000
 June 30--feed and vet bill--\$2,000
 July 31--feed bill--\$3,000
 August 31--feed bill--\$4,000
 September 30--feed bill--\$5,000
 September 30--sell hogs--\$32,000

You have two options in borrowing the money for this enterprise.

- a. One lender will loan you the money in two installments, \$14,000 on May 15 and an additional \$10,000 on June 30, both loans to be repaid when the hogs are sold at a simple interest rate of 14 percent.
- b. A second lender will offer you a line of credit with a ceiling of \$30,000 at 14½ percent. This lender requires you to purchase stock of 5 percent of principal each time you borrow additional money. You can borrow with this line of credit as you need to and pay back as you can.

Which of the two options should you choose? What is the cost of the credit used in option a? What is the cost of the credit used in option b?

5. You are considering the purchase of a 220-acre farm that is priced at \$875 per acre. The person that owns the farm is willing to take a 20-percent down payment and loan the remainder at 14 percent interest; equal annual payments are to be made for 25 years. Using the amortization table, how much would your annual payment be, and how much of the first year's expense would be interest expense?
6. Your feed store allows you to charge items purchased during the month and then bills you on the last day of the month for the accumulated purchases. The bill becomes overdue on the 10th day of the following month, and if it is not paid by then, the store charges 2 percent per month until the bill is paid. What is the true APR this business is charging for overdue bills?

RATE YOURSELF AS A CREDIT RISK

Can you walk into your bank, production credit association, national farm loan association, or some other lender's office with confidence that you will rate a loan? Are you sure that you have a good proposition to offer? Or are you afraid you'll be turned down?

It all boils down to this--Are you a good credit risk?

The answer to this question cannot come out all in black and white. However, there are some answers about you and your farming that your lender needs to know. If you will take your pencil and check yourself yes or no on the accompanying list, you will know about where you stand with the measuring sticks that lenders use.

Let's divide the detailed questions lenders ask into some broad categories--the borrower, the land, the farming plan, the records and the loan. Check yes or no on each of the following check points and then turn to the back page for your rating as a good, medium or poor credit risk.

Rate yourself before you look at the answers.

THE BORROWER--the most important		Yes	No
1.	Do my friends and neighbors think well of me?		
2.	Do I let my bills run?		
3.	Do I explain to my creditor why I can't meet a payment?		
4.	Did I pay off more of my obligations in good times than I was obliged to?		
5.	Do I resist a lender's suggestions about my business?		
6.	Do I have a lot of bad luck?		
7.	Is my health good enough for me to carry more debt?		
8.	Am I farming the same way I did 10 years ago?		
9.	Can I carry myself through a bad year or two?		
10.	Can I cut my expenses in hard times?		
11.	Do my buildings need many major repairs?		
12.	Do I take good care of my machinery and livestock?		
13.	Does my family help make decisions?		
14.	Does my family assist in the farming enterprises?		
15.	Do I keep up-to-date by reading farm magazines and in other ways?		
16.	Do I consider use of credit a normal part of my farming operation?		
17.	Do I go all out for something new before it has been proved for my community?		

THE LAND		Yes	No
18.	Have I checked the past production records of the farm I'm buying?		
19.	Will the land return enough to carry the mortgage for its 20- or 30-year life?		
20.	Will the land support my family as well as the mortgage?		
21.	Do I know whether or not it will pay me to buy fertilizer?		
22.	Have I used any suggestions from the extension service and agriculture education instructors?		
23.	Does my land have any unchecked gullies?		
24.	Will I have to move before I can benefit from some soil improvements?		
25.	Are my crop yields average or better for my community?		

THE FARMING PLAN		Yes	No
26.	Do I know what I'll be doing on my farm two years from now?		
27.	Can my farming program be adjusted to meet emergency situations?		
28.	Do I rotate my crops?		
29.	Do I buy seed and other supplies on the basis of price only?		
30.	Do I always sell my crops right after harvest?		
31.	Have I checked to see if a marketing or purchasing cooperative can help me?		
32.	Do I regularly have to sell livestock before it is ready for market to pay my debts?		
33.	Will I have anything left for farm improvements after living expenses and loan payments?		
34.	Do I have good-quality livestock?		
35.	Am I satisfied to stand pat on the quality of my livestock?		
36.	Do I have the machinery and the tools I need?		
37.	Have I a profitable "bread and butter" enterprise to back up any main operation losses?		
38.	Can I shift from parts of my operation that are a losing proposition?		

THE RECORDS		Yes	No
39.	Do I keep my records in my head?		
40.	Can I tell how much money I made or lost last year?		
41.	Do I know if I made or lost money on separate operations?		
42.	Am I increasing my net worth (difference between what I own and what I owe)?		
43.	Are my debts large in relation to what I owe?		
44.	Do I have debts scattered among numerous creditors?		

THE LOAN		Yes	No
45.	Will the money I borrow increase my income?		
46.	Do I always borrow on 60- and 90-day notes?		
47.	Am I going to have something to sell when the loan payment comes due?		
48.	Have I checked for better terms elsewhere?		
49.	Is my loan written so I can pay off the debt, or part of it, ahead of the due date?		
50.	Do I only ask for credit the day or week I need it?		

KEY TO RATE YOURSELF AS A CREDIT RISK (HO-10.6)

Here is the key to HO-10.6. Don't read this until after you have rated yourself as a credit risk.

You should have answered YES to these questions: 1, 3, 4, 7, 9, 10, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 25, 26, 27, 28, 31, 33, 34, 36, 37, 38, 40, 41, 42, 45, 47, 48, and 49.

You should have answered NO to these questions: 2, 5, 6, 8, 11, 17, 23, 24, 29, 30, 32, 35, 39, 43, 44, 46, and 50.

SCORING: If you had all the answers right, you probably are an excellent credit risk.

If you had not more than 8 errors, you are a good risk.

With 9 to 18 wrong answers, you probably are a medium risk.

More than that wrong and you probably rate as a poor risk.

RESEARCH AND EVALUATION

FARM BUSINESS MANAGEMENT ANALYSIS

ADMINISTRATIVE GUIDELINES



URL YOUNG FARMER



Revised 1993

Cooperating with
Agricultural Education Society
Division of Vocational and Technical Education
Department of
Education and Secondary Education
University of Missouri-Columbia



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ADMINISTRATIVE GUIDELINES
FOR
FARM BUSINESS MANAGEMENT ANALYSIS

**A PHASE OF THE ADULT PROGRAM
OF VOCATIONAL AGRICULTURE IN MISSOURI**

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November 1980

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April 1993

TABLE OF CONTENTS

Overview	
Introduction	1
Instruction	5
Instructional Units	6
Instructional Approach	7
Minimum Standards	
Operation of the FBMA Phase of the Total Adult Program	9
Minimum Standards for Missouri Adult Vocational Agriculture Education Programs	10
Regulations in Fulfilling the Missouri Standards for Adult Education in Vocational Agriculture	11
Establishing an FBMA Program	
Teacher Requirements	17
Starting a New FBMA Program	17
Developing Enrollment	21
Planning the Instructor's Schedule	22
Facilities	26
Maintaining Files	26
Public Relations and Member Communications	27
Evaluating FBMA	30
Miscellaneous Suggestions	30

OVERVIEW

Introduction

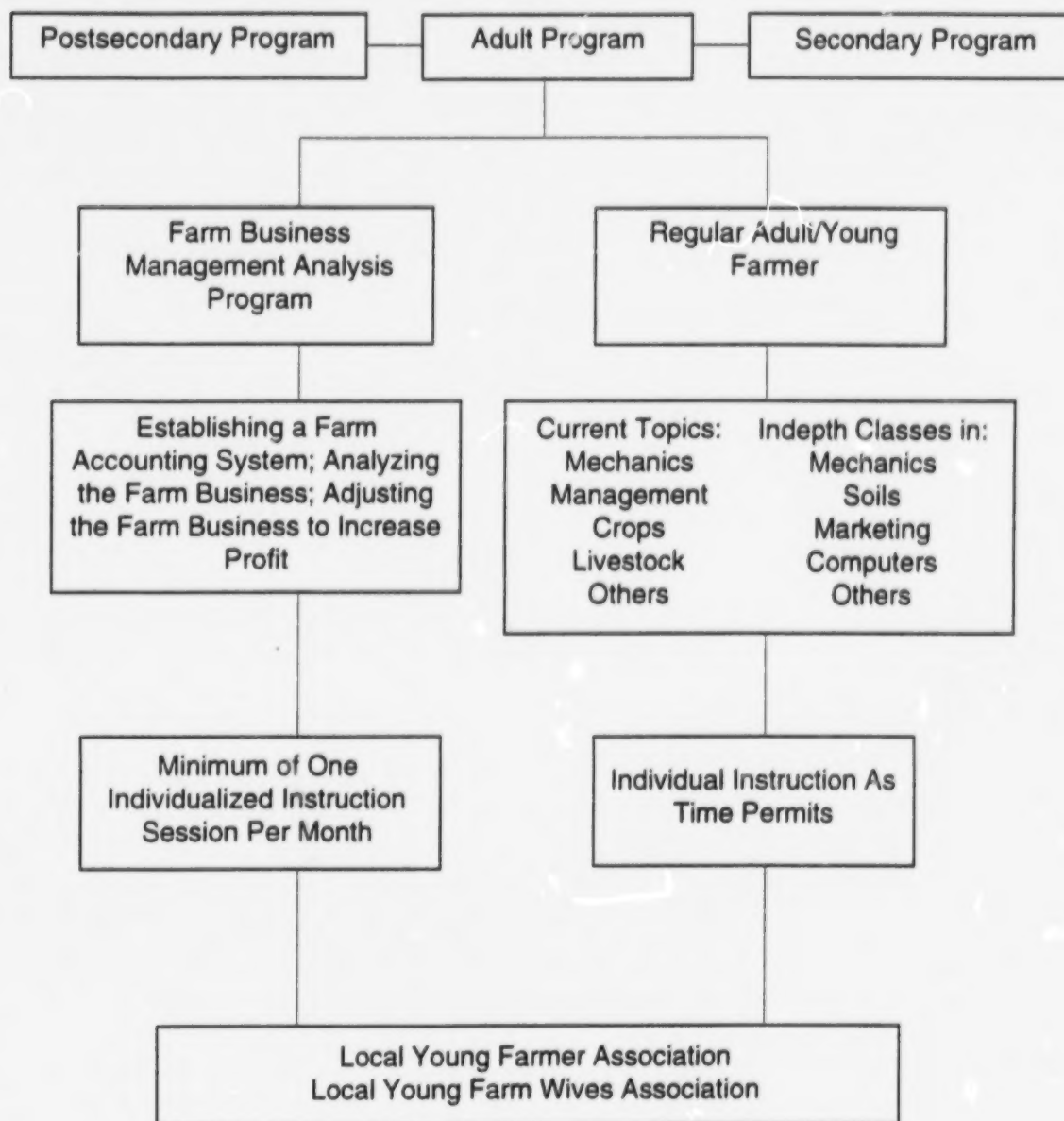
Agriculture is one of the nation's largest and most important industries. American farmers produce most of the food and fiber needed for our expanding population and annually export a substantial amount to other countries. The ability to meet these needs efficiently and economically will have a great impact on our citizens as consumers and on improving our balance of trade with other countries.

The Smith-Hughes Act of 1917 provided funding on a matching basis with the states for the purpose of promoting vocational agricultural education for present and prospective farmers in the public schools. Subsequent vocational acts have placed additional emphasis on vocational agricultural education for young farmer and adult students. Historically, state and federal monies have provided a substantial part of the funding of salaries for teachers of adults in vocational agriculture. In Missouri, many local school districts have provided their share of funding for adult programs as an investment in their own futures, as the communities that support the local schools are dependent upon prosperous agriculture. Local funding is permissive in accordance with State Statute 171091, which states, "Local districts may provide gratuitous education for individuals 21 years of age and older."

Great advances in the science and technology of farming have occurred during the past twenty years. More progress has been made in the productivity per farmer since 1940 than in all of recorded history. Change in the area of financial management has not kept pace. Rewards for good financial management are not received immediately and, thus, change is more gradual and over a longer period of time. Indeed, farming has become and will continue to be a complex business requiring the use of technology and economic and management information. Because of the complexity involved in farming, there exists a continual need for educational training.

In order to meet the needs of the young/adult farmers in the state of Missouri in the area of financial management and analysis of financial records, the Farm Business Management Analysis (FBMA) program has been developed. The relationship this program has with other existing phases of the total vocational agriculture adult program is outlined in the following chart for full-time adult teachers, part-time adult teachers and single teacher departments.

RESPONSIBILITIES OF TEACHERS FOR ADULT/YOUNG FARMER EDUCATION



Full-time teachers and part-time teachers of adults are expected to provide regularly scheduled individualized instruction for a core group.

Teachers conducting the FBMA Program fit one of the following categories relative to the amount of time devoted to conducting the program:

1. Teachers in a multi-teacher department devoting 100 percent of their time to an adult program;
2. Teachers in a single- or multi-teacher department devoting between 25 and 75 percent of their time to an adult program; or
3. Teachers in a single-teacher department providing this type of instruction for one to three couples. The time spent is in addition to the secondary program.

Instruction

The FBMA Program, designed to be a portion of a total adult program, consists of three years of intensified instruction. Teachers of vocational agriculture work with a selected group of farm families, both in the classroom and on their farms. Instruction after the third year is less intensified, and less time is spent with each individual farmer.

The first year of instruction deals with the development of a complete set of farm records for summary and analysis. Instruction during the second year involves the analysis and interpretation of the farm records kept during the first year. The third year of instruction is comprised of farm planning and reorganization based on the analysis of records made during the first two years. Instruction following the third year consists of updating the farmer in selected areas and continuing farm planning and reorganization.

Unit titles for the four years are: Establishing a Farm Accounting System, first year; Analyzing the Farm Business, second year; Adjusting the Farm Business to Increase Profit, third year; and Advanced Farm Business Management, fourth year and beyond.

Instructional Units

The FBMA program is composed of the following instructional units.

Unit I--Establishing a Farm Accounting System

<u>Lesson</u>	<u>Title</u>
1	Orientation to the Farm Business Management Analysis Program
2	Introduction to Keeping Records
3	Recording Receipts and Expenditures
4	Planning the Year's Cash Flow
5	Developing Inventories of Machinery
6	Developing Inventories of Livestock and of Crops and Supplies
7	Developing an Investment Record for Real Estate
8	Keeping Enterprise Records
9	Completing Farm Support Records
10	Using the Concept of Time Value in Planning

Unit II--Analyzing the Farm Business

<u>Lesson</u>	<u>Title</u>
1	Minimizing This Year's Taxable Income
2	Summarizing the Year's Records
3	Methods of Tax Management
4	Planning Next Year's Livestock and Cropping Programs and Cash Flow
5	Analyzing the Profit/Loss Statement
6	Analyzing the Financial Statement and Cash Flow
7	Analyzing Livestock Enterprises
8	Analyzing Crop Enterprises
9	Analyzing Machinery, Equipment, and Building Costs
10	Utilizing Farm Credit

Unit III--Adjusting the Farm Business to Increase Profit

<u>Lesson</u>	<u>Title</u>
1	Determining the Most Profitable Cropping System
2	Planning Income Tax Management
3	Closing the Record Book
4	Planning This Year's Cash Flow
5	Analyzing the Farm Business
6	Lowering Operating Costs
7	Reducing Overhead Costs
8	Determining the Most Profitable Livestock System
9	Adjusting Capital Investments to Increase Net Profit
10	Increasing Labor Efficiency

Instructional Approach

The FBMA lessons have been prepared using a standard format for adult materials. Teachers enrolled in F444 at Mount Vernon, Summer 1979, developed the basic format for teaching adults. Cooperation among teachers, university staff and state staff has resulted in the following approaches, suggested for use as a general procedure for teaching adults.

The format of FBMA lessons is as follows:

Unit (Title of Unit)

Lesson (Title of Lesson)

- A. Review (review key points of previous session)
- B. Objective (objective of the lesson)
- C. Motivation (utilize interesting information and past experiences of class members to initiate discussion of the topic)
- D. Key Points (appropriate points regarding the objective of the lesson)
- E. Introduction of Information (factual information pertinent to accomplishment of the objective)
- F. Discussion (incorporate application of the new information)
- G. Conclusions (offer guidelines based on lesson for class members to use)

Other sections included in the format that are not a direct part of the actual classroom instruction procedure include:

Announcements

Social

Individual Instruction (suggestions for key points related to the lesson to be discussed on visits)

Materials (the shopping list of transparencies, handouts, etc., needed for successful completion of the lesson as it is written)

MINIMUM STANDARDS

Operation of the FBMA Phase of the Total Adult Program

Minimum state standards for funded adult programs were established, specified in DESE Standards for Adult Programs and put into effect in July 1983. The main purpose and intent of the standards is to ensure that the three components of a funded adult program, namely Farm Business Management Analysis, Classroom Instruction, and Young Farmers Education/Leadership Programs are in place and in balance with each other.

Guidelines for evaluating and certifying the fulfillment of the standard for each component have been developed and are summarized in the following information. In late March of each forthcoming year, your adult program will be certified as to the level of compliance met during the current year. The state adult reimbursement for your school for the next year will then be determined on the basis of that compliance percentage. In other words, 1993-94 reimbursement will be based on your 1992-93 adult activity.

Minimum Standards for Missouri Adult
Vocational Agriculture Education Programs

- I. Each program will include a Farm Business Management Analysis (FBMA) program.
 - A. Enrollment will be based on time assigned to adult work, with 20 farm units enrolled for a full-time instructor, 13 for two-thirds time assignment, 10 for one-half time assignment, and 6 for one-third time assignment.
 - B. Establish a farm accounting system with each enrollee to:
 - 1. Analyze the farm business.
 - 2. Adjust the farm business to increase profit.
 - C. Conduct a minimum of one individualized instruction session per month per enrollee during the three-year program. After completing the three-year program, instruction as needed.
 - D. Analyze each unit's farm business records at the end of the year.
- II. Each program will include Classroom Instruction in the following areas:
 - A. Instructor conduct at least one In-Depth Class per year.

EXAMPLES: Ag Mechanics, Soils, Marketing, Welding

(Based on 30 total hours of instruction for full-time assignment; 20 hours for two-thirds assignment; 15 hours for one-half time assignment; and 10 hours for one-third time assignment.)
 - B. Instructor conduct at least 10 class sessions per year for the Farm Business Management Analysis (FBMA) group.
 - C. Young Farmers will coordinate and set up current topics classes.
- III. Each program will provide leadership development activities through a Young Farmers organization.
 - A. Young Farmers will be encouraged to participate in district, state, and national activities.

EXAMPLES: District Tour & Banquet, State Tour & Convention, National Institute

Regulations in Fulfilling the Minimum Standards
For Missouri Adult Vocational Agriculture Education Programs

1. The purpose of these regulations is to define and explain any issues relating to the implementation of the Minimum Standards for Missouri Adult Vocational Agriculture Programs.
2. Table I breaks down the time allocation of the three components of a full-time adult program. Part-time programs will consist of the same three components, but on a lesser scale.
3. Table II describes in table form the requirements in terms of numbers of analyses required, hours of Classroom Instruction required, hours devoted to Young Farmers organizational/educational activities, and the respective percentage weights for figuring state salary reimbursement.
4. Programs approved under old standards may use farm business analyses other than the Missouri FBMA analysis if approved by the State FBMA Coordinator and the State Adult Coordinator (DESE). Programs approved and expanded for the 1984 fiscal year and after (July 1, 1983, to June 30, 1984) must use the Missouri FBMA analysis. In addition, when a teacher change occurs after April 1985, the program must convert to the Missouri FBMA analysis.
5. The adult MVATA teachers committee, State FBMA Coordinator, and State Adult Coordinator (DESE) will meet and write a specific analysis format to which any alternative analysis system will have to conform and report. The format will be as compatible as possible with the Missouri FBMA analysis in place.

All schools will report each farm in the approved format on an individual basis to the State FBMA Coordinator by March 15. Names will not be required past the local level. However, a DESE supervisor will be able to verify FBMA enrollment with the local instructor at any time.

6. The FBMA standard will be certified by the State FBMA Coordinator as to the number of approved analyses (including alternatives) completed for the year. All approved adult programs will support and maintain the work and activities of the State FBMA coordinator through a fee structure. The State FBMA Coordinator will be in charge of conducting workshops and teaching classes, collecting and summarizing analyses for all enrollees in the state, writing curriculum and support materials, and serving as a resource person for all FBMA instructors in Missouri.

7. The Classroom Instruction and Young Farmers standards will be certified by the vocational agriculture supervisory staff. The Annual Report of Vocational Agriculture (VA-5) and supervisory visits will be the basis for determination.
8. Programs will be certified each year by March 20. Adult reimbursements will be affected in the following fiscal year (July 1-June 30); (i.e., next year's reimbursement will be dependent on this year's activity). The amount of reimbursement available in the upcoming year will be figured by multiplying the level of standard fulfillment in percentage by the maximum level of adult reimbursement available for the position (see Table III).
9. Letters of program approval specifying the amount reimbursable for the upcoming year will be sent to the school administrator in charge and the vocational agriculture instructor by March 25.
10. If approved by the DESE supervisor, a program that is undergoing a change of instructor would be fully reimbursed the first year for the new instructor regardless of past history.
11. The intent of the state standards and regulations for adult education in vocational agriculture is to ensure that the three components of the program (FBMA, In-Depth Classes, Young Farmers) are in place and in balance in the local school. The attempt herein is to support that balance with a consistent reimbursement policy that will encourage the proper mix. Even though the formula is based on partial reimbursements, absence or continual neglect of one component of the program will result in elimination of all reimbursement.

TABLE I
FULL-TIME VOCATIONAL AGRICULTURE ADULT INSTRUCTORS'
SUGGESTED TIME GUIDELINES

I. FBMA		
A.	Visits - 20 enrollees X 10 visits = 200 visits X 2 3/4 hours each =	550 hrs.
B.	Visit preparation - 200 visits X 2 hours =	400 hrs.
C.	*Other activities =	50 hrs.
		1000 hrs. (50%)
II. Classroom Instruction		
A.	30 hours of In-Depth instruction or 10 to 20 class sessions =	30 hrs.
B.	Preparation for In-Depth Classes - 5 hours' preparation per hour of instruction =	150 hrs.
C.	FBMA classes - 20 per year X 3 1/2 hours =	70 hrs.
D.	FBMA class preparation - 20 X 4 hours =	80 hrs.
E.	Young Farmer topic classes - both groups - 20 sessions X 3 hours =	60 hrs.
F.	Young Farmer topic class preparations - 20 sessions X 3 hours =	60 hrs.
G.	Individual visits with enrollees arising out of class problems - 40 visits X 2 3/4 hours each =	110 hrs.
H.	Individual visit preparation - 40 visits X 2 hours =	80 hrs.
I.	*Other Activities =	60 hrs.
		700 hrs. (35%)
III. Young Farmers		
A.	**District meetings - one winter, one summer =	16 hrs.
B.	**State convention - 3 days + 3 days' overhead =	48 hrs.
C.	**State summer tour - 3 days + 3 days' overhead =	48 hrs.
D.	National Institute - 3 days + 3 days' overhead =	48 hrs.
E.	Social activities - 3 activities =	30 hrs.
F.	Fund raising =	40 hrs.
G.	*Other activities =	70 hrs.
		300 hrs. (15%)
TOTAL		2000 hrs. (100%)
*Other activities		
MVA Summer Conference - 4 days =		32 hrs.
Fall adult teachers' meeting - 2 days =		16 hrs.
Teacher committees - local school and vocational agriculture - 4 days =		32 hrs.
FBMA workshops - 4 workshops X 6 hours =		24 hrs.
District teachers' meetings - 1 1/2 days =		12 hrs.
Area teachers' meetings - 6 meetings X 4 hours =		24 hrs.
Professional improvement activities - 5 days =		40 hrs.
		180 hrs.

**These activities in addition to those at the local level are considered most important in terms of the total Young Farmers/Wives program.

TABLE II
CHARACTERISTICS OF PERCENT-TIME ASSIGNMENTS IN ADULT EDUCATION PROGRAMS

Percent Adult Assignment	Maximum/Minimum Periods of Secondary Classes Approvable	FBMA Requirements as Certified by Analysis	Classroom Instruction - Minimum Hours of Instruction Including Preparation	Young Farmers/Young Farm Wives - Hours Leadership Educational Activities	Hours Per Year Devoted to Adult Instruction	Percentage Weights for Figuring State Reimbursement
full time	0 / 0	20 units	700	300	2,000	50% FBMA 35% Classroom 15% Y.F.
2/3 time	2 / 1	13 units	467	250	1,334	47% FBMA 35% Classroom 18% Y.F.
1/2 time	3 / 2	10 units	350	200	1,000	45% FBMA 35% Classroom 20% Y.F.
1/3 time	4 / 3	6 units	233	150	666	43% FBMA 35% Classroom 22% Y.F.
1/6 time	5 / 4	3 units	117	100	333	35% FBMA 35% Classroom 30% Y.F.

TABLE III EXAMPLES IN FIGURING ADULT REIMBURSEMENT

Example 1 - Teacher A is a 50-percent time (1/2 time) adult teacher. On March 20, 1993, it was determined that he had completed 11 farm analyses, a 15-hour In-Depth Class, 10 FBMA classes, and an active Young Farmer series of educational topics classes as well as active participation in district and state activities. Teacher A's salary for the coming year is \$23,600. The adult reimbursement for teacher A would be figured as follows:

I. FBMA

of FBMA Analyses for Record Year ÷ # required by instructor = *100% x FBMA Emphasis (45%) = 45 % FBMA Compliance

Example: $11 \div 10 = *100 \times 45\% = 45\%$ of FBMA Compliance

II. Classroom Instruction

**Hours of Classroom Instruction ÷ **Required hours of Classroom Instruction by instructor = *100% x FBMA Emphasis (35%) = 35 % Classroom Compliance

**including preparation time and associated individual visits.

Example: $350 \div 350 = *100 \times 35\% = 35\%$ Classroom Compliance

III. Young Farmers Educational/Leadership Activities

Completion of an adequate level of educational and leadership activities on all levels = *100% $100 \times 20\% =$ 20 % Young Farmer Compliance

Example: $100 \times 20\% = 20\%$ Young Farmer Compliance

Summary

45 % FBMA Compliance + 35 % Classroom Compliance + 20 % Young Farmer Compliance = 100 % Total Compliance in 1992-93.

\$ 23,600 total salary x 50 % time adult assignment x 70% (applicable adult rate) = \$8,260 maximum eligible adult reimbursement.

100 % total compliance x maximum eligible adult reimbursement of \$ 8,260 = \$ 8,260 adult reimbursement available for your school for Fiscal Year 1993, based on current year's activity.

* 100% maximum

Example 2 - Assume the same situation as in Example 1 except that the teacher completed only 4 farm analyses and a 12-hour In-Depth Class. The adult reimbursement would then be figured as follows:

I. FBMA

of FBMA Analyses for Record Year ÷ # required by instructor = *100% x FBMA Emphasis (45%) = 45 % FBMA Compliance

Example: $4 \div 10 = 40 \times 45\% = 18\%$ of FBMA Compliance

II. Classroom Instruction

**Hours of Classroom Instruction ÷ **Required hours of Classroom Instruction by instructor = *100% x FBMA Emphasis (35%) = 35 % Classroom Compliance

**including preparation time and associated individual visits.

Example: $278 \div 350 = 79 \times 35\% = 27\%$ Classroom Compliance

III. Young Farmers Educational/Leadership Activities

Completion of an adequate level of educational and leadership activities on all levels = * 100% $100 \times 20\% = 20$ % Young Farmer Compliance

Example: $100 \times 20\% = 20\%$ Young Farmer Compliance

Summary

18 % FBMA Compliance + 27 % Classroom Compliance + 20 % Young Farmer Compliance = 65 % Total Compliance in 1992-93.

\$ 23,600 total salary x 50 % time adult assignment x 70% (applicable adult rate) = \$8,260 maximum eligible adult reimbursement.

65 % total compliance x maximum eligible adult reimbursement of \$ 8,260 = \$ 5,369 adult reimbursement available for your school for Fiscal Year 1993, based on current year's activity.

* 100% maximum

Establishing an FBMA Program

Teacher Requirements

Teacher requirements are in accordance with the guidelines for certification developed by the Department of Elementary and Secondary Education. Furthermore, teachers should possess a thorough understanding of basic accounting principles and farm management procedures. Participation in a series of inservice workshops concerning the FBMA program is also a prerequisite.

Starting a New FBMA Program

Before beginning the FBMA program, the local school district must recognize the need for and the role of FBMA instruction in their present adult education program. Educating district personnel in these regards may become the responsibility of the prospective instructor. Benefits to the community and benefits to individual enrollees are listed below. These ideas should help justify the initiation of the FBMA adult program in the local community.

BENEFITS TO THE COMMUNITY FROM FBMA

1. Education of adults fulfills a public responsibility/service.
2. Economic returns to the community could increase with respect to better overall management of individual farms. (One state reported an approximate \$9 increase in business for each \$1 spent on the program.)
3. The development of a consciousness among adults regarding civic responsibilities is enhanced.
4. Adult classes encourage more individuals to participate in community activities.
5. The teaching and technical skills of the teacher are improved, which could create a positive impact on the secondary program.
6. Adults perceive the school to be the active educational center as a result of participating in adult classes and, thus, often increase personal interest and financial support for the school.
7. FBMA will encourage farmers to improve their farm business. (One study showed the average farmer received a \$4.20 increase in income per \$1 spent on the program.)

8. Enrollees benefit from sharing agricultural practices and experiences.
9. School facility utilization is increased.
10. The community's awareness of agricultural management practices is increased.

BENEFITS TO THE FBMA ENROLLEE

1. Ten class sessions are provided.
2. Ten individual meetings are provided.
3. Assistance with summarizing and interpreting farm business records is provided.
4. Computer analysis and instructional review of individual business records is provided.
5. Assistance with developing and working to attain specified family and farm goals is provided.
6. The opportunity to use the instructor as a resource person is provided.
7. Simultaneous enrollment with spouse/partners, etc., is available.
8. A full three-year sequence of courses is available.
9. Membership in the Young Farmer/Young Farm Wives associations is available.
10. Protection of confidentiality is planned for and encouraged.
11. Knowledge and practical experience using the Missouri Farm Business Record Book and the FBMA accounting system is gained.

Local school districts with a full-time or part-time adult teacher should coordinate efforts toward implementation with the Missouri Department of Elementary and Secondary Education (DESE). Full-time secondary teachers must have prior approval from DESE each year before operating an FBMA phase of the adult program.

Incorporating the FBMA program into an existing adult program will require planning. The instructor should keep in mind that FBMA has a close relationship

with the total adult/young farmer program (see the chart on page 3). Therefore, the instructor who wants to start FBMA and already operates a regular adult/young farmer program has to decide how the process of building enrollment will be managed. For example, the FBMA participants can be drawn from the local adult population at-large, the current enrollment in the regular adult/young farmer program or a combination of both.

The instructor must also decide which unit or units of FBMA to teach. The goal should be to make the transition into the four-year FBMA series run as smoothly as possible. One instructor may want to start the FBMA series in sequence by only offering Unit I--Establishing a Farm Accounting System the first year. Then, as each group progresses, the entire four units series is in progress after the third year of operation. Another instructor may have individuals from the regular adult/young farmer program who are ready to start with Unit II--Analyzing the Farm Business. Therefore, two separate sessions for Units I and II are in operation the initial year.

So that all enrollees and instructors generally understand what the outcomes of the FBMA program are, the "Mutual Understanding" form has been included on page 20. This is neither a contract, nor a binding agreement. It is merely a document indicating that both the instructor and the enrollee understand the basic responsibilities pertaining to participation in the FBMA program.

FARM BUSINESS MANAGEMENT ANALYSIS PROGRAM
MUTUAL UNDERSTANDING*

In order to clarify responsibilities of both the Farm Business Management Analysis (FBMA) program enrollees and instructor, the following statements have been reviewed.

The responsibilities of the instructor are to:

1. Organize and conduct 10 class sessions in addition to other adult/young farmer classes.
2. Schedule and conduct one individual meeting per month for 10 months with each enrollee at a mutually agreeable time.
3. Assist in summarizing farm business records at the end of the year.
4. Have records analyzed by computer and review with enrollees.
5. Maintain confidentiality.
6. Assist enrollees in working to attain specified goals.
7. Collect fees and maintain records of deposition of those fees.
8. Serve as a resource person in securing and providing information on related subjects.

The responsibilities of the enrollees are to:

1. Attend class sessions regularly.
2. Be available for the scheduled individual instruction periods or contact instructor to reschedule.
3. Pay fees of \$_____ on or before _____.
4. Maintain records using the Missouri Farm Business Record Book and FBMA accounting system.
5. Actively participate in class.
6. Be a member of Missouri Young Farmers/Young Farm Wives.
7. Establish family and farm business goals.
8. Plan to participate for a minimum of three years.
9. Evaluate the FBMA program at least annually to provide the instructor with constructive suggestions/criticisms.

We have reviewed the above statements and would like to participate in the Farm Business Management and Analysis Program.

*This is for the purpose of communication and is not intended to serve as a binding agreement or contract.

Date

Enrollee

Instructor

Developing Enrollment

Teachers need to be highly selective in securing enrollment for the FBMA program. Enrollees must want to improve and increase the efficiency of their farm businesses if worthwhile instruction in FBMA is to result. Following is a list of characteristics suggested for prospective enrollees.

1. The enrollee should be able to benefit from the FBMA class by:
 - a. performing managerial functions in the farm business;
 - b. being goal oriented;
 - c. being change oriented;
 - d. enrolling simultaneously with spouse, partner, etc.
2. The enrollee should be able to contribute to the FBMA class by being:
 - a. willing to share personal ideas, examples, and experiences;
 - b. able to regularly attend class.
3. The enrollee should be willing to actively participate in the FBMA class by:
 - a. keeping and analyzing records;
 - b. using the Missouri Farm Business Record Book;
 - c. using the FBMA analysis system;
 - d. paying fees;
 - e. scheduling individual meetings mutually agreeable with the instructor;
 - f. holding active or associate membership in the YF/YFW associations.

During the recruitment phase, teachers should make a personal contact with prospective enrollees to explain the purpose and objectives of the FBMA program and the possible advantages and outcomes to them should they decide to enroll. All enrollees will be required to keep a complete set of farm records and should be willing to share, on a strictly confidential basis, their financial records with the teacher. Farmers enrolled in the program should be encouraged to use the Missouri Farm Business Record Book, although other complete accounting systems may be used.

All persons either already involved in or planning to become involved in the decision-making process of a farming operation should be enrolled in FBMA. This means that individuals, partners, couples, etc., may enroll.

Enrollees should be interested in attending the entire course. Instruction in FBMA is designed for three years to be of maximum benefit to enrollees. Three years are necessary to obtain meaningful measures of performance for individual farm units.

Planning the Instructor's Schedule

Teachers of adults schedule their time between group classes, individualized instruction and planning time in the office. Group classes are generally conducted at night. A balance of individualized instruction and planning time is maintained during the day.

The adult instructor of FBMA, whether full-time or part-time, has many responsibilities. Therefore, to more effectively manage time allowances for instructional planning, class sessions, visitations, etc., it is suggested that a monthly schedule like the one on page 23 be developed. This procedure will help prevent missing important dates while at the same time getting time allotted for all important responsibilities.

The monthly schedule should be developed as accurately as possible. This will prevent "double dating" in terms of conflicting events. Besides being accurate, the schedule should be flexible. Avoid developing such a rigid schedule that minor changes disrupt a major portion of events. It may be interesting to complete a daily diary of what you actually did for a particular month and compare it to the planned calendar. This may give some indication of the correlation between planned events and actual events.

A copy of the planned monthly calendar should be presented to the school administrator. This serves several purposes. First, the administrator sees that "a job" is being done. Secondly, a more accurate picture of what "the job" entails is presented. Finally, keeping the administration informed serves as a good in-school public relations tool. Accounting for your time, particularly outside of the school facilities, is a primary responsibility of the teacher of the adult FBMA program.

It is also important to plan and schedule individual meetings. Dates and times for the visit should be mutually agreed upon by both the instructor and the enrollee. It is suggested that the instructor plan visits during regular work hours as often as possible, thus limiting late evening visitation. An example visitation form is included on page 24, along with a blank visitation form on page 25. The topic should be filled in prior to arrival on site. Space is provided for listing problems discussed, recommendations made, information needed and tentative topic for the next visitation. The back of the form could be used for additional notes. The completed form should be filed with other records concerning the individual enrollee.

Example of a Half-Time

ADULT TEACHER MONTHLY SCHEDULE

Home Phone 679-2100

Office 679-2200

Instructor M. O. Voag

Month November 1992

SUN.	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SAT.
1	2	3	4	5	6	7
	H.S. Classes	H.S. Classes	H.S. Classes	State	State	
	Robert Retter FFA Mtg 7:30	Bob Dimitt FBMA I - 7:30	1:00 office 3:00 SAE visits (2)	Teachers Mtgs.	Teachers Mtgs.	
8	9	10	11	12	13	14
	H.S. Classes	H.S. Classes	H.S. Classes	H.S. Classes	H.S. Classes	
	Duane Smith	Ronnie Haas	Adult Tchrs Mt 1-5:00	1:00 office YF/Adult Class 7:30	1:00 office 3:00 SAE visits (2)	
15	16	17	18	19	20	21
	H.S. Classes	H.S. Classes	H.S. Classes	H.S. Classes	H.S. Classes	
	Bob Smith	Don Edwards	SAE visits (4)	1:00 office YF/Adult Class 7:30	1:00 office Faculty Mtg 4:00	
22	23	24	25	26	27	28
	H.S. Classes	H.S. Classes	H.S. Classes	Thanksgiving	Thanksgiving	
	1:00 office 3:00 SAE visits (2)	Steve Hopper 4-6:00 Area Ag Teachers	1:00 office 3:00 SAE visits (2)	Vacation	Vacation	
29	30					
	H.S. Classes					
	1:00 office 3:00 SAE visits (2)					

FARM BUSINESS MANAGEMENT AND ANALYSIS PROGRAM
INDIVIDUAL VISITATION FORM

Name _____

Date _____

I. Topics for Today's Visitation:

1. *Records--cash flow and updated.*
2. *Markets--beans, calves.*

II. Topics and Problems Discussed:

1. *February--cash flow for bank.*
2. *December--cash flow for business.*
3. *Custom Rates--disc-field cutter and spray--planted, cultivated acre.*
4. *Jean will have cash flow sheet drawn up for next visit.*
5. *Enterprise analysis sheets started.*

III. Recommendations Made by Instructor:

1. *IBR calves.*
2. *Take soil tests.*
3. *Enter bank payment as a receipt and an expense.*

IV. Information Needed:

V. Tentative Topic for Next Visitation:

Date: _____

Time: _____

VI. Upcoming Meetings and Class Topics:

FARM BUSINESS MANAGEMENT ANALYSIS PROGRAM
INDIVIDUAL VISITATION FORM

Name _____

Date _____

I. Topics for Today's Visitation:

II. Topics and Problems Discussed:

III. Recommendations Made by Instructor:

IV. Information Needed:

V. Tentative Topic for Next Visitation:

Date: _____ Time: _____

VI. Upcoming Meetings and Class Topics:

Facilities

An office should be provided that will coordinate with the total vocational agriculture program and allow easy accessibility for enrollees. Privacy for teacher-enrollee conferences should be maintained.

The following list of equipment is also suggested for this program:

1. Teacher's desk.
2. Work table and chairs.
3. Two four-drawer filing cabinets with locks.
4. Electronic calculator with tape.
5. Private telephone.
6. IBM or compatible (286K minimum) with 3.0 MSDOS or better.
7. Instructional materials for teacher and enrollees.

Maintaining Files

The FBMA instructor will want to be accountable. Adequate files will help in this regard. Two categories of files, student and instructor, should be maintained.

A separate file on each individual enrollee will be beneficial. Information to maintain should include:

1. Completed enrollment forms.
2. Visitation records.
3. Mutual Understanding form.
4. Farm Record Data.
5. Other information.

The instructor will also want to maintain an accurate file concerning various aspects of the FBMA program. Suggested files include:

1. Monthly schedules (both planned and actual).
2. Travel records.

3. FBMA lessons and units.
4. Evaluation forms.
5. Prospective member list.
6. Other information.

Public Relations and Member Communications

Good public relations within the community is an essential component of FBMA adult instruction, as it is with other aspects of vocational agriculture programs. The following is a partial list of groups that must be worked with successfully:

1. Former adult students.
2. Prospective adult students.
3. Agricultural organizations.
4. Cooperatives.
5. Agricultural agencies.
6. Agricultural businesses.
7. Educational organizations.
8. Local school administrators.
9. Community leaders.
10. Others contributing to the promotion and progress of the local vocational agriculture program.

Informing the public can be accomplished in a number of ways. Newspaper articles are probably most common. Numerous publications explaining the procedures for writing such an article are available. Other ways of informing the public include: (1) radio talk shows, (2) presentations for civic organizations and the like, (3) posters, (4) letters, (5) open houses of school facilities, (6) farm tours, (7) community demonstrations and (8) exhibits.

A monthly newsletter can be developed specifically for FBMA enrollees or for the total adult/young farmer group. Some teachers may prefer to include FBMA information in a more widely distributed newsletter. It can serve as a tool for informing the enrollees concerning class sessions and related activities. A sample monthly newsletter appears on the next page.

SAMPLE MONTHLY NEWSLETTER

July 23, 1990

TO: Mytown Young Farmers and Young Farm Wives

From: M. O. Voag--Young Farmer Advisor

YOUNG FARMERS STATE TOUR: I would like to remind everyone that the state tour is August 5, 6, and 7 in the Greenfield-Lockwood area of southwest Missouri. Headquarters for the tour is at Greenfield High School football field at Greenfield.

As you have probably already read in the state newsletter the tour will be showing a lot of diversity of southwestern Missouri with a good barbecue on Monday evening and super entertainment by Jim Craig, "The Good Humor Man."

At this time I'm planning to leave Sunday evening and stay for the duration of activities on Monday and return late Monday evening. Please contact me as soon as possible if you haven't already sent in your registration fees. We should let the Greenfield-Lockwood Young Farmers know about how many will be attending the tour. Registration for the tour is \$20.00, which covers the meals and drinks while on the tour. A motel listing with prices is provided with the enrollment form.

I'M ON THE JOB: Believe it or not I'm working this summer and am available if anyone needs my assistance. Note the enclosed calendar which indicates the days you would most likely be able to contact me. Remember that any work that requires manual labor I'm allergic to!

ADULT EDUCATION CLASSES FOR WINTER OF 1990-91: Planning needs to start now for effective adult education classes to occur this next winter. The Young Farmer officers need your input in order to determine what will be offered. Please check the enclosed form and return it to me immediately so that classes that you want will be held this next winter.

REMINDER: The next Young Farmer meeting will be held Wednesday, August 15.

Evaluating FBMA

An essential component of any program is evaluation. This step serves as an indicator of a program's progress. Information collected can be used to identify strengths and weaknesses. If changes are implemented to alter weak areas, the program continuously improves.

Several examples of evaluation forms presently being used in different schools have been included on the following pages.

1. The first (set of three) is intended to serve primarily as a program evaluation. The results will help identify those lessons that contain information that the class enrollees actually use in the farm business. An individual form has been designed for each of the three units in FBMA.
2. The next form is intended as an instructional evaluation. The class members are asked to respond more to how the class was managed than to what was included. It is a teacher evaluation.
3. The third form, unlike the others, contains open-ended questions relating to a general evaluation of FBMA.

The FBMA instructor is encouraged to implement some type of evaluation that can be done on a regular basis (quarterly, annually, etc.). The forms presented herein are intended as possible examples. The instructor may choose to use only one of the forms, all of the forms, or any combination. The instructor may also want to develop his/her own evaluation instrument.

One caution should be kept in mind. In many cases adults have not had previous experience with evaluation forms. A precise explanation of the procedures they are to use in completing the forms is necessary.

Miscellaneous Suggestions

1. A portion of each monthly meeting should be devoted to the discussion of specific accounting problems confronting enrollees.
2. The instructional meetings should start no later than October to assure ample time in preparation necessary to complete the beginning inventory in January.
3. Adequate time should be spent in preparation for each instructional session.
4. Definite objectives should be identified for each instructional session.

Evaluation

FARM BUSINESS MANAGEMENT ANALYSIS PROGRAM Unit I--Establishing a Farm Accounting System

Lesson	I use the information provided in this lesson . . .			
	Very Often	Often	Seldom	Never
1. Orientation to the Farm Business Management Analysis Program				
2. Introduction to Keeping Records				
3. Recording Receipts and Expenditures				
4. Planning the Year's Cash Flow				
5. Developing an Inventory of Machinery				
6. Developing Inventories of Livestock and of Crops and Supplies				
7. Developing an Investment Record for Real Estate				
8. Keeping Enterprise Records				
9. Completing Farm Support Records				
10. Using the Concept of Time Value in Planning				
	Very Often	Often	Seldom	Never
THE INSTRUCTOR WAS:				
1. Prepared for class.				
2. Enthusiastic.				
3. Competent in technical skills.				
4. Able to communicate effectively.				
	Very Often	Often	Seldom	Never
INDIVIDUAL INSTRUCTION:				
1. Benefited my business.				
2. Was well-timed and scheduled.				
3. Met my needs.				

Evaluation

FARM BUSINESS MANAGEMENT ANALYSIS PROGRAM

Unit II--Analyzing the Farm Business

Lesson	I use the information provided in this lesson . . .			
	Very Often	Often	Seldom	Never
1. Minimizing This Year's Taxable Income				
2. Summarizing the Year's Records				
3. Methods of Tax Management				
4. Planning Next Year's Livestock and Cropping Programs and Cash Flow				
5. Analyzing the Profit/Loss Statement				
6. Analyzing the Financial Statement and Cash Flow				
7. Analyzing Livestock Enterprises				
8. Analyzing Crop Enterprises				
9. Analyzing Machinery, Equipment, and Building Costs				
10. Utilizing Farm Credit				
	Very Often	Often	Seldom	Never
THE INSTRUCTOR WAS:				
1. Prepared for class.				
2. Enthusiastic.				
3. Competent in technical skills.				
4. Able to communicate effectively.				
	Very Often	Often	Seldom	Never
INDIVIDUAL INSTRUCTION:				
1. Benefited my business.				
2. Was well-timed and scheduled.				
3. Met my needs.				

Evaluation

FARM BUSINESS MANAGEMENT ANALYSIS PROGRAM Unit III--Adjusting the Farm Business to Increase Profit

Lesson	I use the information provided in this lesson . . .			
	Very Often	Often	Seldom	Never
1. Determining the Most Profitable Cropping System				
2. Planning Income Tax Management				
3. Closing the Record Book				
4. Planning This Year's Cash Flow				
5. Analyzing the Farm Business				
6. Lowering Operating Costs				
7. Reducing Overhead Costs				
8. Determining the Most Profitable Livestock System				
9. Adjusting Capital Investments to Increase Net Profit				
10. Increasing Labor Efficiency				
	Very Often	Often	Seldom	Never
THE INSTRUCTOR WAS:				
1. Prepared for class.				
2. Enthusiastic.				
3. Competent in technical skills.				
4. Able to communicate effectively.				
	Very Often	Often	Seldom	Never
INDIVIDUAL INSTRUCTION:				
1. Benefited my business.				
2. Was well-timed and scheduled.				
3. Met my needs.				

Evaluation

FARM BUSINESS MANAGEMENT ANALYSIS PROGRAM

A.	THE INSTRUCTOR. . .	VERY OFTEN	OFTEN	SELDOM	NEVER
	1. has a positive attitude.	_____	_____	_____	_____
	2. is willing to be of help.	_____	_____	_____	_____
	3. is too slow in getting information for members.	_____	_____	_____	_____
	4. provides good, pertinent advice.	_____	_____	_____	_____
	5. does not follow through to problem solving.	_____	_____	_____	_____
	6. avoids answering questions.	_____	_____	_____	_____
	7. works well with the class as a group.	_____	_____	_____	_____
	8. works well with individuals.	_____	_____	_____	_____
	9. spends too much time with a few, select members.	_____	_____	_____	_____
	10. effectively manages class discussions.	_____	_____	_____	_____
	11. schedules visits to match my available time.	_____	_____	_____	_____
	12. helps me improve my record keeping.	_____	_____	_____	_____
	13. is enthusiastic.	_____	_____	_____	_____
	14. is well-organized for visits.	_____	_____	_____	_____
	15. is well-organized for classes.	_____	_____	_____	_____
	16. is competent.	_____	_____	_____	_____
B.	Check the area(s) in which the instructor needs improvement:	C. At this point, I would give the instructor an overall performance of (check one):			
	___ 1. Financial management	___ Does not meet requirements			
	___ 2. Records	___ Needs job improvement			
	___ 3. Marketing	___ Meets job requirements			
	___ 4. Production	___ Exceeds job requirements			
	___ 5. Other _____	___ Far exceeds job requirements			
	(please specify)				

**Adapted from Chillicothe Evaluation Forms.*

General Evaluation

FARM BUSINESS MANAGEMENT ANALYSIS PROGRAM

1. Do you believe you and the group have benefited enough from the information presented in the classes that they should be continued?
2. Do you favor continuation of the classes if they are handled in the same manner as they were this year?
3. Based on this past year, would you recommend this class to someone else?
4. At this point, do you think you will sign up for another year?
5. What improvements would you suggest?

**Adapted from Chillicothe Evaluation Forms.*